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# JOHN BULL & HIS SCHOOLS



# JOHN BULL & HIS SCHOOLS

A Book for Parents, Rate-  
payers, and Men of Business

BY

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BANK OF ENGLAND,' 'LONDON COUNTY  
COUNCIL FINANCE,' ETC.

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# John Bull and His Schools.

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## INTRODUCTION.

WHY is it that the education question in England has drifted away from the field of calm intelligent deliberation into an arena of barren and bitter controversy? Evidently it is because the main issue has become overloaded and obscured by side issues, some of them irrelevant, some fictitious, and some absolutely perverted. Self-elected authorities and would-be experts have seized control of the discussion and are driving it round and round in a vicious circle. The sectary, the faddist, the doctrinaire, the politician, and the professional pedagogue have all laid violent hands on it and would fain use it for ends of their own.

While on the one hand education suffers from the excessive zeal of false friends, on the other it suffers still more from the apathy of those who have the deepest and most direct interest in it. Too much politician and too little parent, too

much pedagogue and too little business man, are its twin defects, or rather the twin causes of its chief defects. The people who are most directly interested in the school work of the country—who have to pay the bills and to suffer for its shortcomings—have the smallest voice in its management. Parents and future employers count for little or nothing even in the new university curricula, which are supposed to have been specially framed for their benefit. As for general education, it is to them an affair of experts, scholastic, ecclesiastic, and official.

The experts have pushed on one side the parent and the employer. The ecclesiastics have brow-beaten and dumbfounded the laity. The politicians have tried to produce a complete school system out of their own heads, and have only given themselves some bad headaches. The whole thing is out of joint and gratuitously distorted. Calm, rational citizens linger in the rear while hot-headed zealots and partisans rush to the front. If every man who takes part in the education controversy could be reduced to his proper share of authority, and if all who take no part in it could be induced to contribute their fair share of attention to it, a workable solution might not be far off. Excessive zeal on one side and excessive apathy on the other are mutually neutralising; hence the slow progress being made.

The forces which have hitherto carried on this forty-year-old controversy now appear to be

approaching a deadlock. In their next onset they may very probably exhaust themselves and have to confess their inability to reach a working agreement. What is to happen then? Is the nation to drift on with a makeshift school system as well as a makeshift army? Or will a new set of reasonable, just-minded men be found to take up the half-finished work, and in a British spirit of compromise grapple with its accumulating difficulties?

If we could imagine anxious parents taking the place of party politicians, conciliatory laymen superseding dogmatic divines, and official codes being brought into some kind of relation with business life, that would be a new and hopeful start. This book has been inspired by such a hope. Its aim is to take a practical and comprehensive view of John Bull and his schools as they actually exist. The data on which it is based have been collected in the course of several years' study of all classes of schools—primary, secondary, commercial, and technical,—but especially the two latter.

The writer has the advantage of being able to compare the costly free schools of the present day with the old parish schools which for three hundred years were the pride of Scotland. Both for the value of their teaching and its infinitesimal price, nothing approaching them is ever likely to be seen in the world again. John Knox's grammar schools were, in their way, as

great marvels of economy and efficiency as the parish schools. The ladder of learning in Scotland was completed by a group of universities, which, though not daring to compare themselves with Oxford or Cambridge, did, as a rule, thorough work within their narrow range.

The Scottish ladder of learning was not only complete in its three successive stages—the parish school, the grammar school, and the university,—but it was in direct connection with the active life of the nation. The student could climb by it into any profession or any kind of business; and there was always room for him at the top. Years of hard work were never at the last moment found to be wasted, as often happens in these more highly educated days.

In course of time Scotland outgrew the school system which had come down to it as part of its reformed religion, and a larger one had to be substituted. In 1871 the heritage of John Knox was handed over to the modern politician. Many alterations and enlargements were made in it, most of them no doubt necessary. But all through them the original spirit survived, and is still in operation. It was too strong and deeply rooted to be modernised out of existence. It was too patriotic to be swamped by the rising flood of political dissent. It had made such good use of its limited means, and created such a host of economical administrations, that, to a large extent, the old methods were continued

under the new *régime*. Only the machinery was changed: the governing power remained the same.

Englishmen, when more than usually irritated by the tumult of futile irrelevant controversy which rages round all their school questions, turn envious eyes to Scotland and wonder why it is so free from educational polemics. There may be various explanations of the anomaly, but two in particular stand out from all the others. Scotland, in adopting a modern school system, had an old and tried foundation to build upon which was made the most of. In England, on the contrary, there has been a continuous and constantly intensifying struggle to get away from the old foundation. The Scottish policy was from the first genuinely conservative, while the English policy has been all the time new-fangled and empirical.

That is one important distinction between the two countries, and the second is that in Scotland the schools were never drawn as they have been in England into the vortex of Church controversy. Scottish dissenters never became so bitter against the Church as to make war on the parish schools merely to spite the parish ministers. Down to the last moment of their existence, the parish schools never ceased to be universally accepted parochial institutions. Even the Disruptionists of 1843, in their wildest frenzies of religious liberty, never dreamt of attacking them. They

chose the nobler and manlier alternative of competing with them by building similar schools for themselves.

Thus it happened that the Disruption—the greatest dissenting movement that ever took place in Scotland,—instead of causing educational strife, proved a great educational boon to the country. It nearly doubled the number of primary schools, and set up a wholesome rivalry between the old ones and the new. Moreover, it placed the two Churches—the Free and the Established—in working relations instead of merely quarrelling relations with each other. It gave them a common interest in education, and helped to bridle the sectarian fury which might otherwise have become as purely mischievous and destructive as it is among the more virulent of English nonconformists. One has only to compare the Rev. John Clifford with Dr Chalmers in order to realise the wide difference there is in a matter of this sort between sectarian fanaticism and religious statesmanship.

It will be seen that the writer decidedly prefers the Chalmers to the Clifford point of view in national education. He takes leave to assume that the habit of mind he acquired in Scotland's "ancient ladder of learning"—the parish school, the grammar school, and the university—may be of some use when applied to the bewildering problems of a less fortunate system of education. It had at least provided him with a definite

standard of judgment, which seems to be the last thing that the average educational critic troubles himself about. In addition, he has had several other kinds of experience not altogether useless—in German universities, in British colonies, in the United States, in Fleet Street, and finally in the City.

In all these places he has found himself, either as a journalist or as a man of business, in close contact with education questions. They turn up everywhere, at unexpected times and in unexpected forms. The more novel they are, the more interesting and instructive. The man who sets up as an authority on education because of the innumerable codes he has drawn up or the number of years he has worked on the scholastic treadmill, would have his mind considerably enlarged by hearing the views of his professional brethren in Canada or Australia. It might be still more enlarged by a round of visits to offices in Throgmorton Street and warehouses in Wood Street.

The Throgmorton Street and the Wood Street views are not negligible quantities, though they are treated as such by ninety-nine-hundredths of educational experts. Neither can the parental view be permanently ignored as it has been hitherto. It is an unfortunate fact that to most English parents the schools in which their children are being trained for the duties of citizenship are sealed cabinets, or if visited at

all are seen only on show days. While parents thus keep themselves in absolute ignorance of the practical work of education, they cannot expect their hazy opinions on the subject to have much weight either with educators or the makers of educational laws.

Parent and teacher have to be brought together somehow. The veil of professional mystery which now divides them must be torn down; and it may then be discovered that the science of education can be greatly simplified,—possibly also made more business-like. The technicalities and phylacteries which now repel the average layman may be found not indispensable. If they could be dispensed with or materially reduced, English education might be not only cheapened but at the same time rendered more efficient.

There is one fundamental law of efficiency which applies to all branches of public service, and to education in particular. None but trained business men seem to be capable of learning it thoroughly and acting systematically upon it. It is that results can never be measured by expenditure. Where one man spends millions with very poor results, another may spend thousands and secure a better return. This disparity of administrative skill is as glaring in educational as in military finance, perhaps even more so. At all events we have it more frequently and painfully thrust on our notice. As a striking example of it we may venture to affirm



that in genuine educational results a shilling went farther with the old parish schools of Scotland than a pound does now with the best managed of council schools.

All through the educational hierarchy—in secondary schools, public schools, and universities—there is the same tendency to confound expenditure with efficiency. Thousands are called for now where half a century ago hundreds sufficed, and sometimes proved more productive. The scholastic poverty of to-day would have been unheard-of extravagance to our grandfathers. And what after all is the difference in the educational output? Are our university men better than those who shed lustre on the Legislature and the Bar in the middle of last century? Do the new secondary schools turn out finer material than the old grammar schools did, dingy, insanitary, and inferior as they were in every way from the Whitehall point of view? As for our primary schools, no one except perhaps some enthusiastic chairman of an Education Committee will seriously contend that the youth of the country have improved under their care except superficially. They may be better washed and smarter looking, but in the higher virtues of industry, reliability, and resource they have obviously degenerated.

It is not the largest and most expensive seed that produces the finest crop. Our educational experience of the past forty years should have

rubbed that important truth into us thoroughly, but we are only beginning to realise it. Theorists, faddists, and experimenters of every kind have had their fling with these unfortunate free schools of ours. The one person who has had no say in them is the business man. The one experiment that has never been tried on them is to conduct them on business lines. All the tests applied to them begin and end inside the schools. The real test which asks what the scholars are worth to the community after they leave school is not only ignored but it is deliberately shirked. There are few Education Committees in England that would care to publish year by year a return showing the occupations of their former scholars. One such return which has fallen into my hands discloses the melancholy fact that barely one-third of the boys who had passed through half-a-dozen schools in a suburban parish had learned or were learning trades. The other two-thirds were unskilled labourers, many of them casuals, thankful for three or four days' work in the week. One has only to live for a few months in a London suburb in order to have it painfully impressed upon him how precarious is the existence of an average day-labourer. When he has seen how they have to hustle round for a day's employment; how often they have to go for weeks together without one; how frequently the wife has to take the place of the husband as breadwinner, and how poor a living they can make even out of their united earnings,—when

one has seen these things he may be tempted to doubt if, after all, free schooling is a great boon to the working man.

One point we can be quite sure about—namely, that a school training which turns out two unskilled for every skilled labourer is highly wasteful from a national point of view. Assuming that a boy attends school for the whole of the legal period, say from five to fourteen years of age, and that the cost of his schooling averages £5 a-year,—the average for London is £5, 8s. 7d. a-year, for county boroughs £3, 13s. 4d., and for urban districts £3, 17s. 3d.,—he will have cost the country between £36 and £45 for education alone. During the same period he will have cost his parents, for food, lodging, and clothing, at least £15 a-year, or £135 for the whole school period.

He goes out into the world, capitalised, as it were, to the extent of £170 or £180. As a capable artisan or an intelligent tradesman he may be well worth it. He may earn enough to make a good return to the nation for what has been laid out on him. But what can an unskilled labourer, living from hand to mouth, do to recoup the cost of his bringing up? The chances are that, instead of ever being able to clear off the original debt, he will every now and then be adding to it. It may be safely affirmed that not one day-labourer in a dozen gets through the year without help of some kind, either from neighbours or local charities, or trade-unions or friendly societies.

That is the condition in life for which two-thirds of the boys passing through our primary schools are carefully, painfully, and elaborately trained. It is to produce every year in England and Wales half a million or more of such drudges that rates and taxes are spent by millions, that Education Committees are set to work in every parish, that special laws have to be enacted, that codes have to be framed, and conscience clauses set up at the door of every school. The poor fellows can be very little better or worse for the scraps of reading, writing, and arithmetic they carry away with them from school. And certainly the country reaps a poor harvest from the seed thus wildly sown.

If unskilled labour and casual employment are to continue to be the main products of our primary schools, we may be driven by-and-by to consider if they cannot be produced at a somewhat cheaper rate. The primitive schools of half a century ago, working with little help either from rates or taxes, minus inspectors, minus committees, and minus District Councils, turned out a larger proportion of skilled labour and a much smaller proportion of chronic "unemployed" than the new system is now producing.

These practical aspects of the education question are being lost sight of in the tumult of parliamentary passion. The writer, having devoted some special study to them, now offers to the public a plain and concise summary of the results. They will be found worthy of the attention of

parents and ratepayers like himself who prefer facts to shibboleths, and real education to the numerous political and ecclesiastical substitutes now being offered for it. His knowledge of our primary schools is largely derived from personal observation and intercourse with teachers. The chapters on higher, commercial, and technical education are condensed from a series of special articles on our newest universities and science schools. They were originally designed for the use of parents in search of such information, and there is reason to believe that they have already been of service in that way to many readers.

About English public schools and universities the writer frankly admits that he can only speak at second hand. He has studied them chiefly from the outside, with occasional glimpses into their inner life from different points of view. One valuable test he has been able to apply to them in studying their influence on members of his own family. The question is now raised with all due deference and respect, What part are these venerable institutions playing in the highest of all branches of national education—the training of our future leaders in politics, in science, and in literature? It is answered in no unsympathetic spirit, nor with any bias, sectarian, utilitarian, or pessimist.

Two very definite impressions have been left on the mind of the writer by his study of our educational condition as a whole. One is agreeable

surprise at the magnitude and variety of our educational machinery. The other is painful surprise at the small results which are being obtained from it, compared with what it seems capable of producing. While educationists, political and professional, are clamouring for more and more millions to spend, one has but to look round at our existing schools, colleges, and universities in order to see ample material for the construction of a system of education well adapted to our needs. It is only waiting to be properly used.

This, I venture to suggest, is the first attempt that has been made to present to the lay reader a complete survey of English schools of all grades and classes. It is also the first attempt that has been made to estimate our whole annual outlay on education—national, local, and private.

## CHAPTER I.—EXPLANATORY DATA.

Total Number of Elementary Schools receiving Grants from the Imperial Exchequer, 1904-5 :—

|                             |        |
|-----------------------------|--------|
| England and Wales . . . . . | 20,656 |
| Scotland . . . . .          | 3,244  |
| Ireland . . . . .           | 8,574  |
|                             | <hr/>  |
|                             | 32,474 |

Total Number of Pupils :—

|                             | On the Rolls. | Average Attendance. |
|-----------------------------|---------------|---------------------|
| England and Wales . . . . . | 6,065,660     | 5,266,690           |
| Scotland . . . . .          | 804,162       | 724,694             |
| Ireland . . . . .           | 696,381       | 478,900             |
|                             | <hr/>         | <hr/>               |
|                             | 7,566,203     | 6,470,284           |

Total Number of Teachers and Pupil Teachers :—

|                             |         |
|-----------------------------|---------|
| England and Wales . . . . . | 172,249 |
| Scotland . . . . .          | 20,867  |
| Ireland . . . . .           | 16,810  |
|                             | <hr/>   |
|                             | 209,926 |

## CHAPTER I.

## HIS FREE SCHOOLS.

IT would be hard to say whether John Bull is at the present moment more worried about his army or his schools. Of late years not a session of Parliament has passed without an attempt of some kind at both army and school reform. In neither case have satisfactory results been reached. Educational specialists and military specialists are still wrangling over the fundamental principles of their science. They are all busy reorganising, co-ordinating, and experimenting. As for the ordinary citizen, on whose behalf these bewildering experiments are ostensibly made, he needs all his time to scrape together rates and taxes enough to pay for them.

John Bull, like the ordinary citizen, is beginning to wonder where it will all end. He has seen his school system undergo three transformations in the past forty years. First he had Church schools subsidised by the State. Next he had a combination of Church schools and State schools, both subsidised. Then he had



Church schools altered to the State school pattern. Now he is struggling with a new demand that he should cut loose from his old partner the Church and turn the whole thing over to the politicians. They have promised him to devise some patent compound of agnostic religion, platonic morals, and South Kensington science, which will not offend anybody's conscience or tread on anybody's corns.

Meanwhile the old gentleman finds himself saddled with over thirty thousand schools in which he has undertaken to educate gratis six millions more or less of his future subjects. He has been puzzling his brain for more than thirty years what sort of education it would be best to give them, but he cannot make up his mind, or rather the politicians will not allow him to make it up. Needless to say, he chafes at the undignified dilemma in which he has been placed. To have spent scores of millions sterling in providing schools and teachers, and then to find it impossible to agree about what should be taught, is surely humiliating if anything ever was. John Bull's free schools appear to be free to everybody but himself. Fanatics, faddists, secularists, and socialists may all make free with them. But the Church which owns more than half of them is to be treated as a trespasser !

It is widely felt, and often very frankly confessed, that the Education Act of 1870 was another case of making war without any plan of

campaign. Its authors, like most of their contemporaries, had education on the brain. For years it had been the despairing cry of social reformers that children must be educated. Numerous and varied reasons were advanced for bringing education home to all and sundry. It alone, it was said, could lift the poor out of their ignorance and misery; it alone could transform them into capable workers and good citizens. That it could possibly fail to produce these desirable results none of the social reformers had the slightest suspicion. That it could by any chance produce other and less desirable results there was no fear whatever. School Boards had only to be elected, new schools built, teachers provided, and popular education would work like a charm.

But in 1907 we know a good deal more about popular education than we did in 1870—more about its limitations and difficulties, as well as about its powers. The former we now see were greatly underrated, while the latter were proportionately overrated. Like the Israelites of old, we have been wandering in the desert for nearly forty years, under the guidance not of one Moses but of thousands—Education Departments, School Boards, Education Committees, school managers and teachers. And still our Promised Land of universal learning is not in sight.

Board School boys—I use the term in its old generic sense, which included all boys at public elementary schools—have as yet realised few of the

enthusiastic ideals of their promoters. A small percentage of them have come to the front in various departments of life. In politics they are well represented by men who can hold their own against the best educated of their associates. There are also not a few trade-union leaders who do credit to their class and their upbringing.

The average Board School boy cannot, however, be judged by shining exceptions like these. Far from doing credit to his teaching, he only excites astonishment that so gigantic a scheme and so vast an expenditure—carried on for over thirty years—should have produced no better results. The Board School boy has seldom much real vitality about him. As soon as he comes into contact with the working world he looks tired and limp. The hope that education would make him a better, steadier, and more skilful workman than his fathers were without it has been completely falsified. What it evidently has done is to give him a strong dislike for manual labour. He keeps away from that if he can, and when in default of more congenial occupation he has to take to it, he puts much less heart into it than his uneducated fathers did. What can the Board Schools have done to him, thus to reverse, as it were, his hereditary instincts?

Before the Board School era, manual labour was the recognised vocation of nine-tenths of the male inhabitants of this and most other civilised countries. There was no invidious distinction

attached to it, and the minority exempt from it was so small as not to count. For the poor it was inevitable, and it would have been well for other classes also if a taste for it had been more systematically encouraged. Thousands of middle-class boys who went wrong might have made first-rate mechanics, and at the same time good citizens, if social prejudice had not denied them the chance. Happily that stupid kind of pride is dying out among the better-off classes, and well-born mechanics are no longer rarities.

To-day manual labour is no longer recognised as the natural vocation of any person or any class. There are no children nowadays brought up to regard it as their future calling. Nine-tenths of the boys who passed through Board Schools were necessarily destined for it in one form or another. But it was apparently not a congenial thought for managers and teachers. They kept their thumb on it. Manual labour was tabooed in text-books and among teaching subjects. It would not have been a welcome topic at Board meetings. It was a skeleton in the cupboard, a shadow in the background. But however much it might be tabooed, it continued to be the natural vocation of ninety per cent of his Majesty's subjects.

The popular education that was really needed when the Board Schools came into operation was manual training of the most practical kind.

It was a time of mechanical invention, of manufacturing improvements, and of industrial development generally. The intelligent mechanic had chances then which he never dreamed of before. It was a time for teaching boys to use their hands first and their heads afterwards; a time for exciting their ambitions to become clever artisans; a time to turn out as many embryo mechanics as could possibly be trained. It was *not* a time for ringing the changes on the "Three R's," or for plastering school walls with polemical creeds.

The Board School boy, as he is now being turned out in hundreds of thousands annually, does not, according to all accounts, shine as a handicraftsman. This unfortunate result may be due to a variety of causes, but a very powerful one is to be found in the vagueness of the school programme. The boy is educated for nothing in particular, whereas both he and his teachers should know from as early a period as possible in his school life what future vocation he has to be fitted for. In the great majority of cases it will naturally have to be an industrial vocation, and there should be no false pride either on the boy's part or the teacher's in preparing for it.

A handicraft, however humble, is a good endowment for any boy to set out in the world with. Even if it should be given up afterwards, it may be a stepping-stone to something better.

And in all cases, rich as well as poor, it may be a useful second string. From the purely educational point of view there may also be something to be said for it. Seeing that the "education of mere words," as John Stuart Mill contemptuously called it, has broken down, and a substitute must be found for it, why not try an experiment in teaching by hand, combined with a moderate amount of book work? The "Three R's" might with advantage be so curtailed as to leave ample time in existing school hours for hand training. They might be even better taught than they are now by being compressed into shorter time. The keener interest which handling tools and having some real work to do might inspire in the children would certainly make them quicker learners.

We throw out the suggestion with deference, not to say trepidation, but it seems to us that the "Three R's" are unduly spun out in the curriculum of our elementary schools. There must be something very wrong in a scheme of education which can spend so many years over such trivial results. The homœopathic amount of reading, writing, and arithmetic which the average Board School boy carries away with him is little more than a few simple tricks he has learned to play with words and figures. The arithmetical tricks are rather out of date, and only the inborn conservatism of the British trader prevents them being swept away to make room

for the decimal system. The latter would be much easier both to teach and to learn; so we may hope, for the sake of the Board School boy, that he will soon be released from his bewildering, stupefying struggle with vulgar fractions and British weights and measures.

The "Three R's" are not in themselves education, but only keys to it. Members of Parliament have been heard to allege that they are indispensable safeguards for household suffrage. The Americans have found a new and ingenious application of them as a check on undesirable aliens. This is an example which we may one day have to follow. As an electoral test the "Three R's" have also a useful future, especially if the present cumbrous methods of teaching them are to be perpetuated. It was not by mere accident that the Elementary Education Act of 1870 trod so closely on the heels of the Household Suffrage Act of 1867. "Our future masters had to be educated," said one of the Parliamentary satirists of the day.

But the "Three R's," without any other form of training, or even with the customary Board School extras thrown in, are surely a very meagre preparation for after life. Be it of the humblest and least intellectual kind, they cannot give much relief to its dulness. With many children they will not go far beyond the boundary between animal instinct and human intelligence. Trained animals frequently appear in public which might

.



have a fair chance to pass the lowest of Board School standards. If they had the power of speech they might rise even to the second or third. The step or two higher which the average Board School boy achieves is after all not very much.

In the scale of intelligence there is no very great difference between the tricks of a clever dog and the little stock of words and phrases and figures which a child picks up in the lower standards. Nevertheless there are millions of children in the United Kingdom who take years to struggle through these standards. And over two hundred thousand skilled teachers, many of them drawing liberal salaries, have to devote their whole time to the apparently very simple process of cramming children with these cut-and-dried words and phrases. The more one thinks of it the stranger it seems that, with all the best help that can be given them, these millions of children should not be able to pick up the "Three R's" in less than eight or nine years.

What amount of reading power does the average Board School boy take away with him after all these years of "Three R" drill? His alphabet he probably learnt before entering school, or if not, it ought to have occupied him only a few months. In the remainder of his eight or nine years he picks up a vocabulary of several hundred words, a few scraps of history, a stray fact



or two of natural science, and the vaguest possible idea of the world in which he will have to earn his living. Put all these scraps together, and ask how far they go beyond the tricks of the performing dog of the music halls?

The practical value of the boy's reading power depends less on the mere amount of it than on the use to which it is afterwards applied. No code or school examination or standardising of any kind can determine that: nothing can do it but the character of the boy himself. In his after life he will do one or other of three things,—he will either improve his reading power by regular use, or he will lose most of it in a fraction of the time that he took to acquire it, or he will preserve just a sufficient smattering of it to be able to spell through his evening paper. In the two latter categories we should be likely to find three-fourths of the boys now being turned out of the vast and costly machine which is supposed to be educating the workmen of the future.

Writing, the second of the "Three R's," has been the subject of much controversy among educationists. Some look down on it as a mere mechanical operation, forgetting that it is almost the only training of the hand which Board School children receive. Others hold that it is more than mechanical, and that children remember what they write much better than what they read. Whichever of these views we

may incline to, it is certain that writing might be taught much quicker than it is. Operations equally difficult can be learned in a workshop in a few months, though Board School writing is spread over years, and then comes out with very little strength or character in it.

If the second of the "Three R's" be such a poor test of education, what about the third—arithmetic? Possibly there is less exaggeration in the Board School idea of it than in either of the others. Arithmetic, even in its simplest form, demands a greater effort of brain power than either reading or writing. From the multiplication table onward it requires a certain amount of *bonâ fide* thinking, as distinguished from mere memory work, and still more from mere manual dexterity. It is one of the gateways to the boundless field of natural science, where even to cross the threshold implies an exercise of reason peculiar to human kind. No performing dog has ever yet tackled the multiplication table or attempted a sum in simple proportion. Here the Board School boy has an opportunity of asserting his human superiority to the cleverest feats of animal intelligence. But he does not as a rule make a very brilliant use of it. Arithmetic is not his strong point, nor is it a strong point with his teachers. If it had been, they would long ago have been teaching and practising a different system of it.

Could any nation with even a moderate degree of arithmetical genius have tolerated the English system of weights and measures for more than a century after our chief commercial rivals had adopted another, not only far simpler and easier to use, but infinitely more rational? Eliminate these stupefying, time-wasting anachronisms from the life of the Board School boy and his dull mind will brighten at once. Half the time he has now to spend on arithmetic will be saved, and there will be no difficulty in filling it with something both more interesting to himself and a better preparation for his after life.

It is all the more urgent to obtain for the Board School boy some relief from the wooden tyranny of the "Three R's" inasmuch as a new danger threatens him. This time it comes from his over-zealous friends the humanitarians. They mean well, and they have made out a strong case against a certain class of parents who have been sweating their children out of school hours. In correcting this evil, however, there is not a little danger of rushing to the opposite extreme. The boy who has to work seven or eight hours a-day in addition to attending school requires legal protection without a doubt. But what about the boy who fills up all his time outside of school hours playing the hooligan in a small way? What about the thousands of boys who scour the streets from

four o'clock in the afternoon till ten or eleven o'clock or even midnight?

Can the County Councils and their Education Committees discover no middle course between parental abuse of child labour and a wholesale condemnation of school children to idleness and mischief for more than half of their waking day? A moderate amount of work performed under strict safeguards against excess would not only be harmless to a healthy boy of twelve or thirteen, but it would be positively beneficial. And he would enjoy it himself, as well as the bit of money it might bring in. If the Education Committees are wise, they will encourage such sentiments in their boys instead of seeming to set their face against all work outside of school hours, which in effect will mean a rapid increase of hooliganism. It would be the logical sequel to their prohibition of excessive work if the Education Committees took the matter into their own hands and had employment agencies attached to all large schools. Boys over a certain age—say, twelve or thirteen—might be put on the list as a reward of good conduct. Local employers needing occasional help could send to the school for a boy and pay for his services into a school fund specially organised for the purpose. The headmaster would see that no boy did more than a safe and reasonable amount of work per week. He would also keep a check on the money, so that undeserving

parents should not get hold of it. In this way the slur on industry which has become associated with so many Board School regulations might be removed.

It is also a serious question if the Act of 1870 did not attempt too much. By crowding together children of different social grades and personal characters it rendered impossible the slightest pretence of personal teaching. The huge schools created under it could only drill children without educating them. There was no room for discrimination, much less for individual attention. Scholars had to be handled in the mass, with little reference either to personal peculiarities or to future vocation. Uniform treatment became inevitable, and in the end all children had to be put through the one mill. A thin veneer of reading, writing, and arithmetic was laid on all round, which may or may not be a great gain according to the point of view from which it is regarded. The theoretical educationist may be delighted with it, but the matter-of-fact employer is far from sharing his pleasure. It often turns out that the thin veneer of reading, writing, and arithmetic has had to be dearly paid for in physique, intelligence, and moral character.

A cold fear is creeping over the country that the Board School boy of to-day is after all a poor substitute for his unveneered but more vigorous predecessor of thirty years ago. A

fair and just comparison of these two typical youths is much needed at the present moment. It is needed not merely for the justification or otherwise of the Board School system, but for the information of business men and the satisfaction of the public. Degeneration of various kinds is alleged in many quarters against the Board School boy. A Royal Commission has inquired into his physique, and such evidence as it obtained was not reassuring. His manners and habits have also undergone a great change—not for the better. This may not be altogether his fault, for it is due chiefly to his greater command of money, accompanied by a corresponding increase of self-dependence. It is further said of him that he shows a constantly decreasing disposition to learn a useful trade.

This last is a very grave matter indeed, for it portends danger to the industrial efficiency of the nation. And it is not the Board Schools only which are implicated in it. The evil originates in the boy being confined to school until he loses the taste for hand-work which is natural to all children. He is too old, and generally thinks too much of himself, to make a good apprentice. Then he finds that he can do much better by becoming a telegraph-messenger, or a van-boy, or “something in the city.” Running messages and selling newspapers in the street are, sad to say, the most lucrative branches of boy labour now extant. A smart lad can earn fifteen shillings or

a pound a-week at either of them. And though the supply of such labour increases steadily, it does not appear to be able to keep pace with the demand.

The practical effect of all this is that boys become independent of their parents almost as soon as they leave school. In a year or two they may be earning more money than their fathers and smoking better tobacco. In another year or two they may be fathers themselves, and then their good time is over. No longer boys, neither are they men, for they have learned no trade. They may become dockers or casual porters or street-corner loafers, but they may never again earn as much as they did when they were boys of fifteen or sixteen. Of course they are always ready to help to swell the ranks of the unemployed. This is not, as some readers may suppose, a picture of hooligan life. The Board School boys referred to are, as a rule, the children of respectable working people, decently brought up and fairly educated. In fact, they are the very class of boys from whom the ranks of our mechanics and artisans should be continually recruited. They are being diverted by thousands from their proper vocation, and in every single case the nation is so much the poorer.

The illegitimate use of boy labour all over the country, but especially in towns, is one of the most obvious of the many evils which are sapping our industrial strength. It is working a double



mischief, for on one hand it diminishes the much-needed supply of skilled labour, and on the other it adds to the growing accumulation of unskilled labour. In so far as Board Schools contribute to this evil—and they are without doubt among the chief contributors,—they are doing the very opposite of what they were originally intended to do. When the cry for popular education was first raised sixty years ago, its main plea was the elevation of the classes who had hitherto been condemned to hopeless poverty and toil. “Give them a chance,” it was said, “to raise themselves out of their misery and become good workmen and good citizens.”

Not sentimentalists alone but cold-blooded economists like John Stuart Mill put the argument for popular education on this practical ground. In his ‘Principles of Political Economy’ he treated of education in what may seem at first glance a far-fetched connection—namely, as one of the possible remedies for low wages. He argued that the labouring class could not expect to improve their condition until they altered their habits. For this, he said, “there is need of a twofold action directed simultaneously upon their intelligence and their poverty. An effective national education of the children of the labouring class is the first thing needful.” But the education he had in view was not at all like what is now being served out wholesale at the expense of the ratepayers. “It is to be hoped,” he said,



“that opinion on this subject is advancing, and that *an education of mere words will not now be deemed sufficient*. . . . Without entering into disputable points, it may be asserted that the aim of all intellectual training for the mass of the people should be to cultivate common-sense to qualify them for forming a sound practical judgment of the circumstances by which they are surrounded. Whatever in the intellectual department can be added to this is chiefly ornamental, while this is the indispensable groundwork on which education must rest.”

Mill proved to be far ahead of his time in the contempt he expressed for “an education of mere words.” Years after he had condemned such education as antiquated it was adopted by a British Legislature as the basis of a popular school system. It has had, and is still having, unstinted millions of money lavished on it. For its use the most costly and elaborate teaching machinery in existence has been created. And all the time it has been a make-believe—“an education of mere words.” The legislators who created it, the officials who have administered it, inspectors, teachers, and independent critics, all join in a chorus of disappointment over its results. It stands self-condemned as “an education of mere words,” which, instead of rendering the labouring class more efficient and self-reliant, has had precisely the opposite effect.

In all public laws for the benefit of particular

classes there is an implied contract between the State and the class benefited. It is reasonably expected of them that they shall make good use of the benefit, not for themselves only but also for the State. The Board Schools of 1870 were created under such an implied contract. They were placed at the free and absolute service of the labouring class with a double view—first to enable them to improve their condition, and secondly, that the State might in its turn benefit by their improvement. They were to be made better citizens and better workmen,—results which would have been attended with great advantage to the whole community.

The two parties to this implied contract—the State on the one hand and the labouring class on the other—have a mutual right to ask how it has been fulfilled. And there is a third party—the taxpayers—who have a still stronger right to criticise. What we ought to know is not how many million children are in attendance at Board Schools, or how many pass annually in each standard, or what amount of money is earned in grants. Judged by these official tests the schools may all be flourishing, and yet the implied contract of 1870 may be receiving very imperfect fulfilment on either side. The vital question for the State is—has it provided the kind of education best calculated to make working class children better workmen and better citizens than they would have been otherwise? Conversely, the vital

question for those who have enjoyed the benefits of this free education is—has it made them better workmen and better citizens than they might have been otherwise?

To both questions the Board School boy of the period is the living tangible answer. He is a peculiar product of a peculiar age. Too often his schooling has spoiled him for his natural vocation. He disdains the workshop or the factory, where his services are most needed. The more genteel functions of the clerk or the counter-jumper have superior attractions for him. But the occupation he favours most is that of a boy messenger in a smart uniform, with a well-paid job now and then, and long intervals of cigarette-smoking between. Hundreds of these boys may be seen at all hours of the day in Throgmorton Street and other busy haunts in the City. There is no real necessity for them. Half of their work might be dispensed with, and the other half could be done by the regular staff of the offices which employ them. Like commissionaires and typewriters, they are, in nine cases out of ten, mere affectations.

Not the City only but the West End swarms with cigarette boys. In every hotel, every theatre, and every office with any pretensions to style, they are an all-pervading nuisance. Good people innocently wonder why juvenile betting and gambling should be so frightfully on the increase. How, indeed, could it be otherwise

where crowds of boys fresh from school are let loose with easily-earned money in their pockets and long stretches of idle time on their hands? What could they be expected to do if not to imitate the men they are thrown amongst,—read sporting papers, smoke, bet, and have what they hear everybody around them calling a “good time”? A few months of such a life will obliterate years of the best education to be obtained at any Board School. The best examination that a boy can pass in the highest standard will be no safeguard against cigarettes and betting when opportunity offers.

The Board School boy may be all right at school and very soon go wrong after leaving it. Even where he does not actually go wrong, he may in other ways fall short of the purpose for which a free education was given him. Unless he becomes more useful to society than he could have been without it, its object will have so far been missed. In a very large percentage of cases it is missed. School authorities could find that out for themselves with very little trouble. Many of them must be well aware of it already. If a little of the anxious care shown in pushing boys through the standards were reserved for seeing them well started in life, the moral gain to society would be immense. As it is, when they have gone through the education mill they are shot out into the street to take care of themselves.

Neither the State nor the Board of Education nor the local authority follows them across the school threshold. Even their parents have to let them go their own way, for parental discipline is often at an end before the sixth standard is reached.

## CHAPTER II.—EXPLANATORY DATA.

Total Number of Secondary Schools  
receiving Grants from the Imperial  
Exchequer, 1904-5—

|                             |       |
|-----------------------------|-------|
| England and Wales . . . . . | 679   |
| Scotland . . . . .          | 51    |
| Ireland . . . . .           | 310   |
|                             | <hr/> |
|                             | 1040  |

Total Number of Pupils—

|                             |         |
|-----------------------------|---------|
| England and Wales . . . . . | 95,299  |
| Scotland . . . . .          | 16,300  |
| Ireland . . . . .           | 14,879  |
|                             | <hr/>   |
|                             | 126,478 |

Percentage of Pupils to Total Population—

|                             |     |
|-----------------------------|-----|
| England and Wales . . . . . | 2.8 |
| Scotland . . . . .          | 3.5 |
| Ireland . . . . .           | 3.6 |

### SPECIAL CENSUS OF SECONDARY SCHOOLS, ENGLAND AND WALES, 1897.

|                                   | Boys.   | Girls.  | Mixed. | Total.  |
|-----------------------------------|---------|---------|--------|---------|
| Private Schools . . . . .         | 46,617  | 80,286  | 26,027 | 152,930 |
| Subscribers' Schools . . . . .    | 8,719   | 6,321   | 3,626  | 18,666  |
| Companies' Schools . . . . .      | 5,188   | 13,238  | 308    | 18,734  |
| Endowed Schools . . . . .         | 59,517  | 14,119  | 3,035  | 76,671  |
| Under Local Authorities . . . . . | 2,272   | 275     | 6,996  | 9,543   |
| Boys in Girls' Schools . . . . .  | 14,957  |         |        | 14,957  |
|                                   | <hr/>   | <hr/>   | <hr/>  | <hr/>   |
|                                   | 137,270 | 114,239 | 39,992 | 291,501 |

## CHAPTER II.

## HIS MIDDLE-CLASS SCHOOLS.

ENGLISH schools are, I believe, officially classified as primary, secondary, and collegiate. These distinctions are obviously founded on methods of teaching, and have no reference to personal or social differences among the scholars. In actual life boys may be more correctly classified as Board School boys, middle-class boys, and university men. The Board School, or, as it is now called, the Council School, embraces in its capacious arms all the children of the working classes and the "lower middles." Its special beneficiaries are householders paying under £40 rent. In England and Wales there are over six millions of such houses, and a curious coincidence worth noting is that there are about the same number of children on the registers of the Board Schools. Every house in England and Wales under £40 rent has, on an average, one child educated at the public expense.

The middle class proper, as judged by the rental test, should include householders paying

from £40 to £150 a-year. Of these there are in England and Wales rather more than half a million. Houses renting at over £150 a-year number only forty thousand, and this select body may be regarded as the "upper ten," whose sons, after passing through public schools, finish off at Oxford or Cambridge. Very probably the reader, especially if he has given no previous thought to the subject, will be struck by the great disparity between these three classes in point of numbers. Board School children are counted by millions, middle-class children by hundreds of thousands, and public school boys by thousands.

It is quite in accordance with our topsy-turvy methods of administration that our knowledge of middle-class schools should be much less exact and reliable than our knowledge of Board Schools. The latter are a far more attractive and dramatic subject than the former. They offer better material for the voluble politician, and more of it. The middle-class school has none of the boundless possibilities of the Board School for cultivating the worship of the unfit. The most hysterical educationist could not start a furore about the feeding of middle-class boys, or their physique, or their hygiene. These excitements are all reserved for the children of the working man. They are thrown in along with free schooling, scholarships, and old age pensions.

Middle-class education is quite prosaic and commonplace compared with that in which



politicians take special delight. The educationists are only now beginning to organise and “co-ordinate” it. A few years ago they took a census of secondary schools which was the first ray of real daylight turned in that direction. The inquiry was carried out by a committee of the Education Department in 1897, and its results were summarised in a special return. There were found to be five classes of secondary schools in operation, namely—

|   |             |
|---|-------------|
| Private schools . . . . .               | 5167        |
| Subscribers . . . . .                   | 197         |
| Companies . . . . .                     | 150         |
| Endowed . . . . .                       | 619         |
| Provided by local authorities . . . . . | 76          |
|   | <u>6209</u> |

The numbers of scholars on the registers in each class were—

|   |                |
|---|----------------|
| Private schools . . . . .               | 152,930        |
| Subscribers . . . . .                   | 18,666         |
| Companies . . . . .                     | 18,734         |
| Endowed . . . . .                       | 76,671         |
| Provided by local authorities . . . . . | 9,543          |
|   | <u>276,544</u> |
| Add boys in girls' schools . . . . .    | 14,937         |
| Girls in boys' schools . . . . .        | 63             |
|   | <u>63</u>      |
| Grand total . . . . .                   | <u>291,544</u> |

If a moderate allowance be made for oversights and omissions, the total would be in round numbers three hundred thousand scholars. The normal increase which has taken place since 1897 will no doubt have raised it over the three

hundred thousand. A clue is given to the varied character of the teaching by a table in the return, which distinguishes the boarding-schools from the day-schools. It makes this distinction for each class of schools—boys, girls, and mixed.

ENGLISH SECONDARY SCHOOLS, 1897.

CLASSIFICATION OF BOARDING AND DAY SCHOOLS.

|                     | Boarders. | Day.              | Percentage of boarders to the whole. |
|---------------------|-----------|-------------------|--------------------------------------|
| Boys' schools . . . | 43,692    | 78,621            | 35.7                                 |
| Girls' " . . .      | 20,670    | 93,568            | 18.0                                 |
| Mixed " . . .       |           |                   |                                      |
| Boys . . . .        | 2,771     | 18,481            | 13.0                                 |
| Girls . . . .       | 1,652     | 17,089            | 9.0                                  |
| Total . . .         | 68,785    | 207,759 = 276,544 |                                      |

This secondary school census of 1897, though bald, is exceedingly instructive. It includes practically every kind of upper school in England and Wales not receiving State aid. It extends from Eton to the smallest private school of which any record could be obtained. The usefulness of another such census would be greatly increased by further grading of the schools. They might, for example, be divided into three grades, putting the great public schools in the first, the quasi-public schools in the second, and the private day and boarding schools in the third.

The first class is not difficult to distinguish. It contains only twenty-one schools, with between eight and nine thousand pupils. Connected with most of these, however, are preparatory schools, which should be counted along with them. Military, naval, and certain other professional schools should go into the same category. Of the highest social class there may be fifty schools in all, with about fifteen thousand pupils. That would represent an average of two pupils for every house in England and Wales rented at over £150 a-year. Each of these boys, very probably, costs his parents while at school an annual sum equal to the house rent. But average it at only £100 a-year and we have a total of a million and a half sterling per annum. That is the cost to the parents only, besides which all the expenditures of the schools and colleges themselves have to be considered.

The junior public schools and ordinary boarding-schools are pre-eminently middle-class institutions. And along with them may be placed the private day-schools, general, commercial, and technical. It is more difficult to form a comprehensive estimate of these than of the highest-grade schools. There are, however, a few clues which may lead up to definite results. In the 1897 census, the total number of boarders in secondary schools is stated at 68,785. If we deduct from that the 15,000 assigned to the highest-grade schools, 53,785, or in round numbers fifty-four thousand,

will remain. These we may regard as the quota of middle-class boarders. Most of the 207,000 day-scholars will also be middle class.

Thus we arrive at a minimum estimate of a quarter-million middle-class scholars in 1897. The actual number was perhaps nearer three hundred thousand, and it may be over that now (1907). The latest available data by which such estimates can be tested are to be found in the 'Handbook of Education,' published by the National Union of Teachers. Under the heading "Higher Education" we have there a catalogue of 1280 schools above the primary grade. They are set out in great detail as to the number of pupils, the number of teachers and their qualifications, the governing body, the fees, endowments, annual grants, &c. A careful examination of the numbers of pupils indicates an average of about 170 per school, and a total of say 225,000.

This catalogue differs in several particulars from the official census of 1897. It includes county and other State-aided schools which the latter omitted. On the other hand, it excludes many private day-schools which formed a large portion of the 1897 census. Though the two do not agree, it cannot be said that they contradict each other. Considering the different lines on which they have been framed, they reach a fairly harmonious conclusion. Neither of them is inconsistent with our original estimate of three hundred thousand scholars in the secondary

schools of England and Wales, or as they might be more correctly termed middle-class schools. The teaching in many of them is not secondary but primary. It is, however, intended to lead up to secondary education, and in that respect it differs essentially from the primary teaching of the Board Schools.

We have now before us the necessary data for drawing a practical comparison between the Board School boy and the middle-class boy. The question is what John Bull does for each of them and what they are likely to do for him in return. The points of contrast between the two are many and varied.

The middle-class boy has so far cost the State little or nothing for his general education, while the Board School boy has had everything free, down to stationery and school-books.

The middle-class parent not only pays for the education of his own children, but he pays for most of the children in houses rented at less than £40 a-year. Thus the householder paying £100 a-year rent has to contribute at least £12 a-year to the rates and taxes, out of which primary schools are supported. The average cost of primary schooling being £5 per head, every £100 householder pays for two and a half primary scholars. He is to that extent a compulsory municipal godfather.

Without drawing invidious distinctions, it may be affirmed that in physical and moral

stamina our middle classes are the backbone of the country. They are more sober than the average working man; they work harder, and have preserved a larger degree of independence.

From a public point of view the middle classes are more patriotic than the working classes; they are less self-seeking, and they have fewer class interests which they set before the well-being of the community as a whole.

Middle-class education, though far from being ideal, is in many important respects far superior to that of the primary schools. It produces men of finer character and stronger moral fibre. Now and then equally good men may emerge from the primary schools, but they are exceptions. In the middle class they form a large majority.

In these days it is quite as essential to preserve and encourage capable citizens as to retrieve and reform incapables. The State should realise where its true strength lies and husband it. Unquestionably it is in the middle class, which has no trade-unions, is not continually clamouring for class legislation, has no secret alliance with Socialism, and is not always trying to shift taxation from its own shoulders.

For these and divers other reasons which might be adduced if space permitted, the middle-class schools of the country have a special claim on the consideration of official educationists. Middle-class boys are at least as much entitled as the children of the working man to the best and

most suitable kind of education that can be provided for them. It will pay the State to educate them well, for it is they who will have to do its best brain-work in the future. It is from them that the great bulk of the students will have to be drawn for its technical and commercial colleges. For these the natural recruiting-ground is the middle-class school. All the scholarship students who can be sent up to them from the primary schools will be mere exotics.

Middle-class schools, especially the older and more historical ones, must continue their close relations with the learned professions. It would be as unreasonable to ask them to sacrifice the old learning to the new as they were years ago in refusing to recognise the new learning at all. They must see, however, that Oxford and Cambridge are no longer the only universities they have to prepare for. For middle-class boys the Manchester, Birmingham, Leeds, and Sheffield curricula will be equally important. These symbolise the special work now awaiting the coming generation of middle-class boys. They typify the engineering, the chemistry, the banking, the commerce, and all the modern industries into which middle-class energies will in future have to be largely directed.

Without saying a word derogatory to classical culture or theoretical science, it may be impressed on the masters of our secondary schools that they owe a duty both clear and urgent to the modern

universities, on which the country as a whole, and the middle class in particular, have so much at stake. Reasonable parents do not expect them to revolutionise their methods of teaching. They do not ask to have Latin, or even Greek, banished from the school curriculum and bread-and-butter subjects put in its place. But they may reasonably object to two dead languages having an educational value attached to them far in excess of any modern study. The English boy's own language throws open to him a literature and a culture as rich as those of either Greece or Rome. Who are our public schoolmasters that they should rate it as worth only half marks?

Several years ago a well-known "coach" wrote to the 'Morning Post' advocating more rational methods of secondary and technical education. His letter brought down on him an avalanche of replies from parents and educationists all over the country. What struck him most in reading them was the hazy notion which many of the writers had not only of the things themselves, but of the names. Several of them frankly asked him what was meant by secondary education.

One correspondent, who evidently shared the now very general opinion that educationists are too much given to phrase-making, objected to the term "secondary and technical education" that it was a mere professional gag which did not suggest to the minds of parents anxious to equip their sons properly for their life's work



any definite course for them to pursue in order to achieve that end.

It is unfortunately true that the average middle-class parent, who is the chief supporter of secondary schools as well as the chief victim of their shortcomings, has the vaguest possible idea of the kind of teaching they lay themselves out for. The upper-class parent, who has been to Eton or Harrow himself, has no such difficulty in choosing a school for his sons. In nine cases out of ten he wishes them to go to his own school. Or should he decide to try another, he knows that they are all conducted on the same system and give a similar kind of training.

There are only about twenty schools altogether which are universally recognised as "Public Schools" of the Eton and Harrow type. Thirty others are on the fringe of the select circle, and outside of them are five hundred schools of various kinds, classified as secondary. The latter form one division of our middle-class school system, the other being the private schools, of which there are legion.

We are only beginning to realise that middle-class education is as important for the State as that of working men. It was not thought of at all in 1870, when popular education was formally adopted as a national policy. The middle classes in those days were regarded simply as taxpayers and ratepayers who were to find the money for educating the children of the poor. They had no

corresponding rights or claims conceded to them. It was never dreamed that they would expect a farthing of return to be made to them or their children for the millions sterling they had to contribute yearly to free schools for the lightest-taxed portion of the community.

Here and there a far-sighted observer saw the injustice of this inequitable arrangement and predicted its failure. Matthew Arnold, in his annual reports on the schools of the Westminster district, specified it among the special defects which he had discovered in the working of the Act of 1870. He pointed out the very narrow meaning which had been given to national education in this country. Instead of being, as in Germany and the United States, education for all classes, it was education for the working classes only. He foresaw, too, that the expenditure on working-class schools, already lavish and yearly increasing, would soon leave nothing for the classes above them.

Both in London and elsewhere [he wrote] School Boards are apt to conceive what is requisite in these respects rather as benevolent, intelligent, and scientific educationists in Utopia, than as practical school managers. . . . Elsewhere the sense of scale and proportion is taught by the conjunction of secondary and superior instruction, as public services with elementary instruction. The three have to be in some measure co-ordered, and this teaches scale and proportion. It is evident that secondary and superior instruction must come to be on an insupportable scale of expense

if the cost of even elementary instruction is to be 55s. 11d. a-year for every scholar. In England secondary and superior instruction are not public services. They are left to be what they can, and to cost whatever they may happen to cost. But really this is a reason not for throwing a heavier burden on the middle-class payer, but for throwing a lighter one. If rates and State grants can do nothing for his children's education, and are at the same time employed with prodigality for the education of the children of the working class, he is the more a sufferer. I am desirous of seeing secondary education made a public service. But the prodigality of our present outlay on elementary instruction interposes an obstacle. Public elementary instruction costs so much that people are alarmed at the notion of making any other public instruction a public charge too.<sup>1</sup>

In the same report—that for 1878—Mr Arnold develops two or three other characteristic ideas which have still a living interest. They find, in fact, better illustrations to-day than when they were originally written. One of them runs counter to the watchword of present-day educationists, that elementary education should be made a national service. In opposition to that Mr Arnold held that it should be a municipal service, as in France and elsewhere.

Public elementary education is properly a municipal charge, and abroad it is treated as such. It is co-ordered with the other branches of municipal expenditure. A measure and a check are thus obtained. In

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<sup>1</sup> Reports on Elementary Schools. Matthew Arnold. Macmillan & Co. 1906.

Paris, for instance, the commercial schools are under the municipality of Paris, and are managed by a committee of that municipality. Such a committee is responsible not only to universal suffrage from which the whole municipality springs, but also to the municipality itself. Our School Boards spring directly from household suffrage. Household suffrage can elect them or reject them, but it cannot properly revise their operations, and to municipal revision they are not liable. True, it was not practicable to give to the School Boards a municipal constitution, because in England we have no proper or complete municipal system. But here is only another reason for getting a proper and complete municipal system. Our School Boards are "in the air" without it. They have not, and cannot well have, a due sense of scale and proportion: they proceed as if they were educationists in Utopia.<sup>1</sup>

Mr Arnold lived to see a "proper and complete municipal system" installed in 1889, though not to see elementary education municipalised by being handed over to the new municipal authorities. As an indirect effect of these changes a step has been taken toward the realisation of his other ideal—the creation of a public service for secondary education. It is doubtful, however, if the movement that is being made in the latter direction would have altogether satisfied him. It has not been started in the interest of the middle class, who for various reasons have the first claim to be considered in secondary education. The secondary schools which the "educationists in

<sup>1</sup> Reports on Elementary Schools, p. 223. Matthew Arnold. Macmillan & Co. 1906.

Utopia " are briskly building up out of the rates are intended as new rungs in the education ladder, by which clever working-class boys are to climb up from the kindergarten to the university. When every possible advantage and opportunity, by means of scholarships and otherwise, have been given to clever working-class boys, then the middle-class boys, whose parents pay the piper, may surely be allowed a look in.

Mr Arnold not only perceived this injustice in the original School Board system, but he foresaw the revulsion which it was bound to produce.

I am convinced [he wrote in 1878] that our rate of cost per scholar ought not to exceed 35s. at the outside, and that it may be brought within that limit without loss of efficiency. But to bring it within that limit we must simplify. Popular education has had its moment of high favour among us, and nobody has asked questions about its cost so long as the prosperity of the country was increasing by leaps and bounds. I confess I am afraid of the cold fit following the hot one in a season of less prosperity. I am afraid of a storm of discontent and obloquy raised against our very expensive system of elementary schools.

Now the storm has come, and it threatens our secondary as well as our elementary schools. There is some reason to fear that in the impending revolt of the ratepayers both classes of schools may suffer. If so, it will be hard indeed on the middle-class schools, which have all along been sacrificed to those below them. There can be

little doubt that, but for the extravagant cost and the poor results of the Board Schools, secondary education would have been taken up by Parliament much sooner than it was. On the other hand, there can be little hope for its receiving adequate treatment while the incubus of the elementary school rate continues to grow heavier year by year. Far from having got down to Matthew Arnold's standard of 35s. per head, elementary education now costs in London about £5 per head, exclusive of building grants, normal schools, administration, and inspection.

That is to say, we spend on the whole for each child more than France spends for two children, and the London School Board spends for each child more than France spends for three children. . . . Still there is no great difference between the state of instruction of an average boy of thirteen who leaves a communal school in Paris, and that of an average boy of thirteen who leaves a Board School in London. It cannot be right; it is extravagant and absurd that the London boy's education should be so managed as to cost three times as much as that of the Paris one.<sup>1</sup>

The foregoing brief retrospect may help to explain why our secondary education is so much more backward and ill appreciated than our elementary education. As to the latter, we have some idea where we stand. A huge experiment has been made, extending over nearly forty years. It has cost over several hundred millions of money,

<sup>1</sup> Reports on Elementary Schools, p. 220. Matthew Arnold. Macmillan & Co. 1906.

and the results are almost universally admitted to be disappointing. The educational Utopians themselves are always the readiest to confess their disappointment. Whether they do it out of sheer cynicism, or by way of propitiating disgusted ratepayers, would be a nice question to decide.

There is one side of the school question which stands out in sharp contrast to all the others. On the financial side there is little or no Babel. Instead of controversy, confusion, and uncertainty, we find plain facts and figures—large figures, it is true, but so much the easier to appreciate. Adding together rates, taxes, and other contributions, close on thirty millions sterling a-year of public money is now being spent on education. Of this about nine-tenths goes to primary, and the other tenth to secondary schools. The numbers who benefit by the secondary schools are, however, a mere fraction of those who share in the primary school funds. In England and Wales they are only 300,000 as compared with over six millions, or little more than 5 per cent.

Thus, numerically, secondary education is a much smaller question than primary education. For every child attending secondary schools of some kind, there are twenty attending primary schools. The former are, therefore, an easier problem in one way and a more difficult one in another. To maintain all the existing secondary schools in a reasonable state of efficiency need not be either a hard or a costly task ; but to increase



them sufficiently to take in even a fraction of the primary school children might involve an alarming addition to our education budget. Instead of dealing as we have done hitherto with thousands of children, we should then have millions to provide for.

When the ideal ladder of learning has been set up, and reaches, as it is going to do, from Battersea to Oxford, the expense per head at the higher rungs will be far greater than at the lower ones. The educationists who are taking special charge of secondary education appear to be even freer spenders than the primary school prodigals. They are more clamorous for grants-in-aid, public subscriptions, and other forms of subsidy. Scholarships, low fees, and free places are to be used as baits to attract students. But in order to be of any substantial value to the six millions of children in the primary schools, this policy will have to be carried a considerable length.

If the numbers now attending secondary schools were to be doubled, that would absorb only three hundred thousand out of the six millions in the primary schools. On the other hand, doubling the number of entrants into learned and scientific professions would simply swamp the whole of them. Most of these professions are overcrowded already, and find it difficult enough to make room for the annual quota of recruits they already receive. An inquiry into the available outlets for the products of our secondary schools as they



now exist would show that they are by no means unlimited. Law, medicine, literature, the Arts, and even the Church, offer a very poor future to any young man with only brains for his stock-in-trade.

Ambitious youths who are being encouraged to climb to the top of the ladder of learning may find the upper rungs rather crowded. And the relief which their advance may give to the lower rungs of the ladder will be infinitesimal. What appreciable difference will a decrease of three hundred thousand make among six millions or more ?

# CHAPTER III.—EXPLANATORY DATA.

## THE NINE SENIOR PUBLIC SCHOOLS.

|                           | 1861—Boys.  | 1906—Boys.  |
|---------------------------|-------------|-------------|
| Eton . . . .              | 806         | 1030        |
| Winchester . . . .        | 200         | 421         |
| Westminster . . . .       | 136         | 275         |
| Charterhouse . . . .      | 116         | 560         |
| St Paul's . . . .         | 146         | 400         |
| Merchant Taylor's . . . . | 262         | 450         |
| Harrow . . . .            | 481         | 577         |
| Rugby . . . .             | 463         | 570         |
| Shrewsbury . . . .        | 131         | 270         |
|                           | <u>2741</u> | <u>4553</u> |

Fees from £100 to £150 a-year.

## THE JUNIOR PUBLIC SCHOOLS.

|                                 | Boys.       |
|---------------------------------|-------------|
| Bradford Grammar School . . . . | 870         |
| Marlborough . . . .             | 589         |
| Clifton . . . .                 | 550         |
| Malvern . . . .                 | 490         |
| Wellington . . . .              | 489         |
| Haileybury . . . .              | 475         |
| Bedford Modern School . . . .   | 430         |
| Uppingham . . . .               | 410         |
| Tonbridge . . . .               | 400         |
| Bradfield . . . .               | 330         |
| Highgate . . . .                | 300         |
| Repton . . . .                  | 300         |
| Liverpool Upper School . . . .  | 262         |
| Mill Hill . . . .               | 245         |
| Seabergh . . . .                | 241         |
| Blundell's . . . .              | 237         |
| Oundle . . . .                  | 234         |
| Radley . . . .                  | 210         |
| Sherborne . . . .               | 209         |
| Dover College . . . .           | 200         |
| Leys . . . .                    | 167         |
| Bedales . . . .                 | 128         |
| Giggleswick . . . .             | 119         |
| Bath College . . . .            | 114         |
| Clayesmore . . . .              | 75          |
|                                 | <u>8074</u> |

Fees from £80 to £120.

## CHAPTER III.

## HIS PUBLIC SCHOOLS.

THE most concise and at the same time comprehensive account of the English Public Schools is to be found in the Report of the Royal Commission which was appointed in 1862 "to inquire into the revenues and management of certain colleges and schools, and the studies pursued and the instruction given therein." The schools specified in the Commission were "the College of the Blessed Mary of Eton near Windsor (commonly called Eton College), Saint Mary College, Winchester, the Collegiate School of St Peter, Westminster, the Hospital founded in Charterhouse in the county of Middlesex, commonly called Sutton's Hospital or the Charterhouse, St Paul's School in the City of London, the Merchant Taylor's School in the City of London, the Free Grammar School of John Lyon at Harrow on the Hill in the county of Middlesex, the school founded by Lawrence Sheriff at Rugby in the county of Warwick,

and the Free Grammar School of King Edward the Sixth at Shrewsbury."

It will be seen that there are nine schools in all, and these continue to be pre-eminently the Public Schools of England. But even in 1862 a new generation of high-class schools was rising up, some of which now rank with the ancient foundations. The Commissioners alluded to three of these—Marlborough, Cheltenham, and Wellington Colleges—as having attained "great magnitude as well as a high reputation." To-day there are still younger institutions of which the same may be said. But the nine schools reported on in 1862 continue in a sense to stand apart from all the others. They form an inner circle distinguished alike by historical interest and social prestige. They are thus described in the introduction to the Commissioners' Report:—

The schools to which this inquiry relates were founded within a period ranging from the close of the fourteenth century to the beginning of the seventeenth—from the reign of Richard II. to that of James I. Winchester, the earliest, is older by several generations than the Reformation, and the revival of classical literature in England. Eton, half a century later, was modelled after Winchester. Each was an integral part of a great collegiate establishment in which the promotion of learning was not the founder's sole purpose, though it seems to have been his principal aim. Westminster is one of the many grammar schools attached to cathedral and collegiate churches for which provision

was made after the dissolution of the monasteries; but it acquired, or perhaps inherited, from the great monastery of St Peter an importance peculiarly its own. Harrow, Rugby, Shrewsbury, Merchant Taylor's, and St Paul's were among the multitude of schools founded in the sixteenth century either by grants of Church lands, from the Crown, or by private persons (generally of the middle class), with endowments sufficient to afford the best education known at that day to so many day-scholars as the neighbourhood was likely to supply or the reputation of a competent teacher to attract.

Only three of these nine schools—Eton, Winchester, and Westminster—are, properly speaking, collegiate in the original sense of the term. In organisation and status they rank rather with the colleges of Oxford and Cambridge than with the purely scholastic foundations of later origin. They might conceivably have become the centres of fully equipped universities. In fact, it was at one time the intention of Henry VIII. to promote Westminster School into a university. Of the other six Public Schools, five—Harrow, Rugby, Shrewsbury, St Paul's, and Merchant Taylor's—were non-collegiate. They were intended for educational foundations pure and simple, and for day-scholars rather than for boarders. The Charterhouse School arose out of a hospital, as Westminster School arose out of a monastery.

These important differences in origin and constitution have naturally produced corresponding

variations in historical evolution. Externally the nine senior Public Schools may to-day look very much alike, but they have reached their present position by very different paths. They tend, however, toward uniformity, and great progress has been made during the past century in creating a common standard for them. The inquiry of 1862 was a considerable step in that direction. It formed one of four important landmarks in the history of higher education in England during the nineteenth century.

The first of these was the revival, both moral and scholastic, which dates from the appointment of Dr Arnold to Rugby in 1829. There were, of course, other factors in it than Dr Arnold, but he contributed to it a distinctive moral force which not only survives but goes on accumulating. The Public School standard of the eighteenth century was notoriously low compared with that of to-day. It almost deserved the scornful contempt which Erasmus poured on the pedagogues of his time. In his 'Praise of Folie' he says of them :—

They have a wonderfully good opinion of themselves, and are able to impress parents with a belief in their ability. The more out of the way their knowledge is the better pleased they are. Dear me ! if any of them happens to discover who was Anchises's grandmother, or if in some worm-eaten chart he chances to light upon

a word or two of barbarous unused Latin, such as *bubosqua*, for instance, or *bovinator*, or *mauticator*, or if—never mind where—he is lucky enough to dig up a fragment of an old stone containing a few mutilated characters of an ancient inscription upon it, verily, by Jove! he is thrown into such a transport of triumphant exultation that you might imagine he had conquered Africa or captured the city of Babylon! . . . They wrangle over pronunciation and grammatical distinctions. In consequence of all this discord among grammarians we have naturally an endless number of conflicting grammars—as many grammars as there are men to write them,—nay more, for I know one grammarian—a friend of mine of the name of Aldus—who alone has produced five different grammars.<sup>1</sup>

Whatever else we may still have to suffer, we are at least beginning to free ourselves from the tyranny of the monkish grammarians. The second landmark of higher education in the nineteenth century was the University Reform movement, the third was the Public Schools Inquiry of 1862, and the fourth was the agitation to which it gave rise for a wider and more scientific curriculum. The Royal Commissioners of 1862 criticised at some length the course of study then being pursued at the Public Schools. They condemned it with faint praise, especially the classical part of it, and offered a number of mild suggestions for its modernisation. They might have had more to say, perhaps, if they

<sup>1</sup> The Praise of Folie. Englished by Sir Thomas Challoner 1898.

had been allowed to see further into the mysteries of the mediæval class-room, but the headmasters did not encourage curiosity on that point.

Nowadays it may seem laughable as well as incredible that a polite request of the Royal Commissioners to be shown the system of teaching in operation should have been refused by seven of the nine headmasters, and conceded by the other two with such evident reluctance that the request was not pressed. The Royal Commissioners could therefore deal with the curriculum only at second hand, and their verdict on it is necessarily limited to generalities. They give, however, an interesting historical sketch of it in passages like the following:—

The course of study at all these schools appears to have been originally confined to the classical languages. The Master and Usher at Winchester were to be “sufficiently learned in grammar” to instruct the scholars in it. Competent instruction in reading, plain-song, and the old grammatical treatise on the eight parts of speech, which went under the name of “Donatus,” was the condition for admission as a scholar, and a “sufficiency of literature in grammar,” the requisite for election to New College. The statutes of Eton and King’s are copied from those of Winchester and New College in all these respects, except that at Eton the Master and Usher are to be respectively a Master and Bachelor of Arts, “if such can be got conveniently.” . . . The ordinances made by Dean Colet for St Paul’s insist with as much vehe-



mence as quaintness of expression, on the boys being instructed in "clene" or pure Latin. They were to be taught Greek also, if a master who knew it could be obtained (which was then difficult), as well as the catechism in English. The old directions for Merchant Taylor's, founded fifty years after St Paul's, are borrowed in great measure from the ordinances of Dean Colet, and copy the requirement that the Master should be "learned in good and clene Latin literature, and also in Greke, if such may be gotten."

Of the four Masters at Shrewsbury, two were required to be Masters of Arts, "well able to make a Latin verse, and learned in the Greek tongue. From the third, who was to be a Master of Arts, Greek was not required. The date of the ordinances which prescribe these qualifications is 1577."

These scholastic ordinances of the fourteenth, fifteenth, and sixteenth centuries still survived in spirit if not in letter at the middle of the nineteenth century. They were only beginning to relax their hold when the inquiry of 1862 was set on foot. A recent writer thus describes the great change for the better which was then in progress:—

In 1835 the education given was of the very narrowest and most cramping description. Nothing was taught but certain classical authors, the making of Latin verses, and a little divinity. By 1865 a far wider course of instruction had become universal. History, mathematics, science, modern languages, and English literature, all found a place, though all were

subsidiary to the sound classical education which alone can give the cultivated taste, the command of language, and the thorough mental training essential to an English gentleman.<sup>1</sup>

The same writer has drawn a dreary picture of Eton in its unregenerate days, before Dr Hawtrey came to its rescue:—

The education at Eton had been of the narrowest—just as had been the case at all Public Schools at the beginning of the nineteenth century. It was practically confined to a knowledge of classical books, and a more or less tricky skill in composing Latin verses. Of the rest of a boy's time a good deal was taken up in learning by heart and repeating immense quantities of the Latin and Greek poets, whose works had been translated in form. Beyond this there was nothing; and the lack of interest in books, as well as the lack of system in games, tended to encourage an idle and mischievous existence.

The boys were lodged and fed as badly as they were taught. Worse than Spartan rudeness prevailed in the dormitories and the dining-halls.

Fifty or more boys in one room with an insufficient number of bedsteads, so that several boys had to put their mattresses on the floor wherever they could, washing done at a tap, no privacy, and no help for the weak or the timid,—these were some of the characteristics of the life. . . . The old Christopher Inn had for years been a source of evil. It was situated right in the middle of Eton, and there was not an hour in the day when Eton boys might not be found there drinking. It was one of the traditions of the school, and its aboli-

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<sup>1</sup> F. A. How's 'Six Great Schoolmasters,' p. 13.

tion was opposed by some of the more conservative Fellows.<sup>1</sup>

These reminiscences of Eton in its "classical" days may be specially commended to two sets of readers—first, the District Councils of to-day, whose elementary schools vie with Park Lane in oak panelling and silver-plated fittings; second, to the surviving opponents of birch-taught Latin and Greek. The latter must admit that the methods of the Public Schools, if not yet perfect, are no longer so severely classical as they used to be. They underwent a marked improvement during the generation when Dr Goodall ruled Eton, Dr Moberley, Winchester, and Dr Arnold, Rugby. The classical system was then seen at its best, and it may be fairly judged by the results it produced under those exceptionally favourable conditions.

An impartial verdict on it must admit that it turned out a certain number of brilliant sixth-form boys, but that on the average boy it was practically wasted. It has been said by a warm defender of classical teaching as it was then practised that—

Dr Goodall expected great things from his sixth form, and his expectations had a way of being realised. He presumed that the work done in school was only a small part of the education of the boys, and expected that all would do an immense amount of private reading. This he encouraged by inviting illustrations from other

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<sup>1</sup> How's 'Six Great Schoolmasters,' pp. 13 and 22.

authors of the book which might be in hand. Thus it is said that "no one of that set would think of going into school without being prepared to illustrate the lesson, if it were Homer or Virgil, from not only Milton but from Dante and Tasso; if it were Demosthenes or Cicero, from great English orators; if it were a Greek play, from the great modern dramatists, whether French or English."<sup>1</sup>

So much for the effect of Eton on naturally intellectual boys such as Dean Milman and Lord Coleridge were in their day. On other boys, equally clever though in different ways and who became equally distinguished men, it had the reverse effect.

The copious diaries of the late Sir Mountstuart Grant Duff show that he was a vehement anti-classical educationist. The following is one sample among many of his reflections on Public School life:—

Need I say that every day and all day I heap curses on the heads of the pedants who wasted my youth and that of all my contemporaries? Any intelligent boy of fifteen who knew the alphabet, applying himself to the study of Greek in Athens for three years, could read, write, and speak modern Greek with perfect facility, and translate a hitherto unseen passage from an ancient prose author quite as well as the average Ireland scholar—all this without intermitting a reasonable amount of attention to other things.<sup>2</sup>

A calmer, and for that reason all the stronger a condemnation was passed on the classical cur-

<sup>1</sup> How's 'Six Great Schoolmasters,' pp. 4, 5.

<sup>2</sup> Diary, vol. ii. p. 24.

riculum by a greater man—Lord Dufferin. In an address to the students of University College he made a very candid confession that in his own case Greek and Latin had proved futile educators.

In looking back on my own youth [he said], the study of Latin grammar, Latin verses, and Latin composition, in none of which did I ever attain any great proficiency, now occurs to me as the sum total of the official instruction I received from the time I was six years old to the time I was twenty; yet, making every allowance for the unpromising material with which my masters had to deal, I cannot but think that something more than this ought to have been the sum total of fourteen years of education. This is the reflection I remember making when I stood up to be examined for my degree at Oxford, and the examiner called on me to construe a passage in Cæsar which I recollected had caused me considerable corporal and mental anguish as a child of eight at a preparatory school.<sup>1</sup>

Lord Dufferin took special interest in the Public Schools inquiry, and thoroughly agreed with the unfavourable verdict in which it resulted. Writing to his son's tutor regarding it he said:—

It is very clear that the problem of educating the British youth has not yet been solved. If you read the report of the Commissioners on the Public Schools of England you will find that nothing can be more disheartening than the conclusions at which they arrive.<sup>2</sup>

Apparently the criticisms of the Commissioners

<sup>1</sup> *Life of Lord Dufferin*, p. 151.

<sup>2</sup> *Ibid.*, vol. i. p. 27.

were strong enough to disturb the equanimity of the headmasters. Several of them entered the lists in defence of the classical *régime*, and thus began a controversy which has flourished for half a century. The most interesting features of it are the pleas put forward by the headmasters for the time-honoured classical monopoly, and the ingenious objections they raised to its being interfered with. Dr Moberley of Winchester wrote a series of letters to Sir William Heathcote, in which he declared it to be quite impossible to find room for so-called modern subjects. He could admit of no rivalry with his two standard studies—classics and divinity.

In my judgment you cannot bring French in as a co-ordinate subject of instruction with the two chief subjects of education—classics and divinity,—or even with the third—mathematics. We can neither find the time in the week nor the teachers.

As regards science, he said:—

It is plainly out of the question that we should *teach* chemistry, &c. A course of lectures in each of the chief subjects of science in turn should be delivered in the school annually by some persons competent to explain the principles of it, and to exhibit by experiment the last discoveries and the present state of the science. More than this I do not think we can aim at with any prospect of adequate advantage. I have found it useful to offer prizes annually for the three best collections of wild flowers made in the year in the neighbourhood of Winchester.

One can imagine the smile with which the

savants of the Royal Society read about Dr Moberley's prizes for the best collection of wild flowers. It was at least a first step towards scientific education. As the discussion proceeded, Dr Moberley made a few more gracious concessions, the last of them being an offer to recognise science and modern languages as eligible subjects for extra work, either during the holidays or after hours. Since then his suggestion has been improved upon by the Nonconformists, who would be graciously pleased to permit religious teaching outside of school hours. By-and-by there may be so many tabooed subjects in the official school programme that most of the teaching will have to be done outside. Dr Moberley's biographer says of him in this connection :—

He considered that boys should be encouraged to learn what French, German, history, geography, &c., they could, either in the holidays or at all events out of school hours, and with this object he instituted examinations at the end of each half-year in these subjects (one Greek and one Latin paper being introduced) for prizes which, at first, he gave himself.

Though the objections of the headmasters to modern subjects have been more or less overruled by the course of events, it must be admitted that in one respect they were well founded. There can be no doubt that so far the principal effect of modernising the Public Schools has been to render the education they give more scrappy and less thorough than it was in the hands of the



headmasters of seventy years ago. The latter, with all their narrowness, were competent scholars, and did well what they professed to do. They made real scholars of their sixth-form boys, who, unfortunately, were not 10 per cent of the whole school. For the other 90 per cent they never pretended to do much. In their candid moments they admitted that it was too Sisyphean a task for them.

At the outset of the "modern side" controversy some headmasters took high ground, and declared that literary and scientific education would not mix, or if they did the mixture would be something dreadful. One of them thus scouted the possibility of a combined classical and scientific training :—

The young man whose education is laid out on a scientific principle may gain a certain acquaintance with various literary matters, as the one whose education is essentially literary may become fairly acquainted with much of science. Let it be understood, however, that there is hardly such a thing possible as a *third* well-digested system of education besides these two.

The "modern side," adopted and carried out in the above spirit, could hardly have turned out a great success. In the most liberal of Public Schools it has been merely an annex—a step-child—while in the more conservative it has been a Cinderella. Commercial subjects have received a still colder welcome. Till lately they were not even allowed to sit on the doorstep. Results



produced under such circumstances could not possibly be otherwise than disappointing. But, unfortunately, the headmasters can retort on the scientists that their own educational experiments have not so far proved very satisfactory either.

In 1903 the Committee of the Royal Society on Scientific Education reported that—

Notwithstanding efforts extending over more than half a century, it still remains substantially true that the Public Schools have devised for themselves no adequate way of assimilating into their system of education the principles and methods of science. The experience of “modern sides” over other arrangements shows that it can hardly be expected that, without external stimulus and assistance, a type of Public School can be evolved which, while retaining literary culture, will at the same time broaden it by scientific interests. On the other hand, it is admitted that many students, trained in the recent foundations for technical scientific instruction, have remained ignorant of essential subjects of general education.

That adverse judgment has since 1903 been followed up by others equally unfavourable. Both the classical side and the modern side have their persistent censors. Such censorship, however, is itself a questionable benefit. We do not seem to “get any forrarder” under it. Its monotony and barrenness begin to make it tiresome. It is always general—sometimes sweepingly so—and it seldom gets down to particulars. It forgets that two systems of education cannot be compared and valued on abstract principles. Only

concrete cases can be weighed and measured. The ultimate test of any school—primary, secondary, or collegiate—is the after life of the scholars it turns out.

Some time ago the writer asked an Education Committee in a London suburb if they had any idea what became of their boys after leaving school. The Committee were rather startled by the suggestion, but after thinking it over they instituted a special inquiry, which yielded results of a very instructive if not exactly flattering sort. From half-a-dozen elementary schools 562 boys were traced, and it was found that only 190 of them had got into skilled trades, 86 were clerks, and no less than 286 were unskilled labourers! Fully one-half of the teaching done in those six schools led up to nothing better than a life of precarious toil, for which the boys might have been better fitted if they had never gone to school at all. They might at least have gained in physique had they been allowed to grow up wild, instead of being cooped up in school-rooms for seven or eight years.

A similar test—and the only test of real value—applied to higher schools might lead to equally surprising revelations. If a systematic inquiry were made into the after lives of the two or three thousand boys who are yearly launched into the world from our Public Schools, what might we find? The popular idea is that most of them proceed to Oxford and Cambridge; but that,

unfortunately, is a delusion. Though it was exploded by the Public Schools Commission of 1862, it again flourishes in society, and once more requires to be killed. The Public Schools Commissioners obtained from each of the nine schools a return of all the boys it had sent to the Universities in the preceding four years—say 1860-64—and the following table, copied from their Report, shows the combined results. Only one-third of the boys—213 out of 617—went on to the Universities.

PUBLIC SCHOOL BOYS WHO WENT TO THE UNIVERSITIES.

|                             | Boys Leaving<br>(average of 4 years). | Boys who went<br>to the Universities. |
|-----------------------------|---------------------------------------|---------------------------------------|
| Eton . . . . .              | 160                                   | 62                                    |
| Winchester . . . . .        | 24                                    | 13                                    |
| Westminster . . . . .       | 27                                    | 12                                    |
| Charterhouse . . . . .      | 25                                    | 8                                     |
| St Paul's . . . . .         | 17                                    | 7                                     |
| Merchant Taylor's . . . . . | 52                                    | 9                                     |
| Harrow . . . . .            | 139                                   | 52                                    |
| Rugby . . . . .             | 130                                   | 38                                    |
| Shrewsbury . . . . .        | 43                                    | 12                                    |
|                             | <hr/> 617                             | <hr/> 213                             |

A sequel to the above table, giving the corresponding figures for the past four years, would in all probability show a still smaller proportion of Public School boys going on to the Universities. There are now so many more channels into which they can drift away that Oxford and Cambridge must necessarily receive a decreasing

percentage of them. What may we suppose becomes of the great bulk of them? A considerable number push their way into the army with the costly help of "crammers." A smaller contingent gets into the Civil Service, another into the Church, and a third into the Law Courts. But there is still a large residuum left unaccounted for.

The Public Schools have undoubtedly been good nurseries for the Civil Service. Until the latter was democratised they were its chief source of supply. Westminster School in particular was a cradle of statesmen and legislators. This was once made the ground of a special appeal to George I. for a grant toward building a new dormitory for the King's Scholars, the old one having become uninhabitable. The memorial, dated 8th December 1718, sets forth that—

The Bishop of Rochester, Dean of Westminster, and the Chapter of that church, humbly represent to your Majesty that Queen Elizabeth, of glorious memory, founded the College of Westminster, which has in all times since been highly favoured by your Majesty's royal ancestors, and has bred up great numbers of men useful both in Church and State, among whom are several who have the honour to serve your Majesty in high stations.

George I. subscribed £1000 to the building fund, the Prince of Wales added £500, and Parliament voted £1200. A new dormitory was accordingly built, "on the west side of the

garden," at a cost of about £5000. Nowadays £5000 would hardly furnish cloak-rooms for an up-to-date elementary school. Not a few illustrious Englishmen have been cradled in the new dormitory at Westminster. It is at least one item in our education expenditure which has yielded adequate returns.

The popular delusion that the Public Schools are the principal "feeders" of the Universities is matched by another myth—that the army depends largely upon them for officers. We are continually hearing of negotiations between the War Office and the Public School authorities with regard to special military courses of study; but apparently these have so far borne little fruit. In 1869 a Royal Commission on Military Education, presided over by Lord Dufferin, remarked on the very small number of young men who entered the army direct from Public Schools without the help of "crammers."

It found that at Sandhurst the system of teaching was very inadequate; that the teaching staff was inefficient, ill organised, and out of personal touch with the students; and that the moral and intellectual tone prevailing among the cadets left much to be desired. The "cramming" process, they reported, is almost universally resorted to by those who seek admission to the army, either through the college or as candidates for direct commissions, of whom scarcely more than 5 per cent could be traced as coming direct from the Public Schools.<sup>1</sup>

After the above exposure of Public School in-

<sup>1</sup> Life of Lord Dufferin, vol. i, p. 146.

efficiency, the military authorities took the matter in hand themselves, and thirty years later it was found—much to the comfort of the headmasters—that they had made a greater mess of it than ever. From the ‘Life of Lord Dufferin’ we learn that—

In 1901 a committee appointed to inquire into the state of military education went over precisely the same ground as that which had been explored thirty-two years earlier by Lord Dufferin’s Commission. It appears from their report that “in consequence of a recommendation made by the Royal Commission of 1869, a Director-General, with a staff of officers, had been appointed to supervise military education, but that the post had been abolished in 1899.” The motive of abolishing it was understood to have been economy, and in fact the supervision exercised can hardly have been worth its cost, for the report of 1902 hits very nearly the same blots and gaps in the system then existing as were detected by the inquiry of 1869. At Sandhurst, according to the second report, the cadets had absolutely no inducement to work, and the instructors had no inducement to teach; the plague of idleness still infested the College; the professors had been carelessly selected; while nothing had been done on the recommendation of Lord Dufferin’s Commission in regard to the special qualifications that should govern the choice of the College Governor.<sup>1</sup>

To the credit of the War Office, it continued its experiments in military education, undismayed by past failures and disappointments. Its latest happy thought was to invite the London School of Economics to organise special classes for the

<sup>1</sup> Life of Lord Dufferin, vol. i. p. 148.

instruction of army officers in book-keeping and accounts. Like all novelties it has made a very satisfactory start, but if it should live to be reported on by the next Royal Commission on military education, it may be found to have exercised only a momentary charm. The real moral of these educational failures may be that the army is its own training-school. There is certainly high professional authority for such a view. The late Colonel Henderson, the military historian, held it, and expressed it strongly in his later writings. He summed up his admirable essay on military education in these words, which, though not flattering to the Public Schools, may be reassuring to the public. They opportunely emphasise the fact that if our army officers do little credit to their classical masters, they often make up for it when they get real work to do.

Education, however, to be of any practical value, must be expended on material that is capable of absorbing it. Was this the case in the regular army of Great Britain? Was the material with which those responsible for the efficiency of the land forces had to deal sufficiently receptive? It is universally admitted that the builders and administrators of the Empire beyond the seas have been and still are at least the equals both in intellect and character of those who control its destinies at home; and to their long roll of honour no class has contributed more largely than the officers of the British army. South Africa, not less than India or than Egypt, affords a striking proof of their capacity for government. Who were the most successful in stilling racial strife, in conciliating the disaffected, in curbing the restive, and



in promoting the prosperity of a young community? Who, in a word, served the Empire best? Not those who had carried off the prizes at Winchester or Eton, or had taken honours at the Universities; not the great statesmen of Westminster or the shining lights of literature, but those who had been bred in camps, who had lived their lives in arms, and whose knowledge of mankind was greater than their erudition.<sup>1</sup>

Fortunately for us all, the future of the British Empire does not depend on the relative merits of classical and scientific schooling. What Colonel Henderson said of the army applies to every other department of real life. School-work counts for little in any of them compared with individual grit, energy, and initiative. The future is everywhere for the man of resource and self-reliance, the man who educates himself as he goes along, and who learns not from books only but from every event, great or small, in his daily life.

<sup>1</sup> Essay on Military Education, p. 388.



# CHAPTER IV.—EXPLANATORY DATA.

## TECHNICAL SCHOOLS AND GRANTS PAID, 1904-5.

|                              | ENGLAND AND<br>WALES. | SCOTLAND. | IRELAND. | UNITED KINGDOM. |
|------------------------------|-----------------------|-----------|----------|-----------------|
| Schools and classes . . . .  | 6,095                 | 768       | 234      | 7,097           |
| Registered pupils . . . .    | 769,997               | 104,259   | 27,658   | 901,914         |
| Total grants . . . .         | £382,248              | £97,470   | £10,563  | £490,281        |
| Royal College of Science . . | ...                   | ...       | ...      | 21,033          |
| Royal College of Art . . .   | ...                   | ...       | ...      | 11,749          |
| Museums, &c. . . .           | ...                   | ...       | ...      | 92,200          |
|                              |                       |           |          | £615,263        |

## CHAPTER IV.

## HIS TECHNICAL SCHOOLS.

To say that technical education in England is characteristically English is to suggest to the intelligent reader that it has also developed a liberal share of anomalies and paradoxes. To these it has added a bewildering maze of local diversities. No two technical schools or colleges in Great Britain are on the same model. No two of them resemble each other in their origin. No two of them are working on the same lines or under similar conditions. No two of them appear to have the same conception of what technical education should be. No two of them stand in the same relation to the industries of their district. Young as they are, our technical schools and colleges have already localised themselves completely. Local circumstances and influences have done far more to shape their individual characters than legislation or professional theory. Like all our other educational experiments, they started out with fine

ideals, but soon found themselves creatures of circumstance.

Their origins have been many and various. Their foster-parents range from the City Guilds, the South Kensington Science and Art Department, and the Charity Commissioners to Socialistic Town Councils and philanthropic millionaires. A few of the best of them have grown out of old Mechanics' Institutes. The South Kensington grants may have helped to prepare the soil for them, but they did it in a most unscientific and wasteful fashion. South Kensington science—paid for at the rate of £5 per head per annum—included subjects in the Board School curriculum for which the Education Department paid only 30s. per head per annum! In order to draw the £5 per head instead of 30s., School Boards had only to fit up a room with a few bottles of chemicals and a small assortment of tools. It passed officially for a branch school of practical science!

That and a few other kindred shams had to be given up at last. Then an enlightened Government introduced a Technical Instruction Act, which the House of Commons, being in a fog itself, made as foggy and obscure as possible. It did not venture on exact definitions or distinctions. All these were left to local option, as most difficult questions are likely to be in future. There was the usual talk about

“co-ordinating” technical education, ending, as usual, in the chapter of accidents. Thanks to exceptional circumstances, we have now in England some technical schools which compare favourably with the best in Germany or the United States. But these are due to no settled policy of the Government or any conscious wisdom of the Legislature. At Westminster technical education is still a mere name—a shibboleth of the political educationist. Throughout the country it is to the mass of people a kind of fiscal problem. They believe that there are great possibilities in it, but how these are to be realised they have only the dimmest of notions.

Under these conditions it is wonderful that technical education should have advanced in England as far as it has done. In most places it is still in the tit-bits stage; but in several large cities the difficulty is no longer to get students and teach them, but to find employment for them afterwards.

Manchester, Sheffield, Leeds, Glasgow, Edinburgh, and other provincial cities, have in one way or another provided themselves with systems of technical education suited to their local needs. Without making any invidious comparisons, it may be said of them generally that they are well organised, well equipped, well conducted, and, on the whole, well adapted to their work. Moreover, they are at last beginning to be

appreciated by the various classes on whom their practical success must depend. Students are forthcoming in large and growing numbers. Money comes in more slowly, except in Glasgow, where it flows like water from Scottish granite. But a sufficient supply of professional prizes for the hundreds of successful graduates who expect to find brilliant positions and high salaries waiting for them after graduation is by no means assured. No actual glut has arisen as yet, but the field for this new type of skilled industry looks small beside the prospective supply.

One day there will be keen rivalry for a place among the pioneers of technical education in England. Happily for some claimants, their title will be easy to establish. If our technical schools can be said to have had a foster-parent, that honour belongs to the City and Guilds of London. They were the earliest, as they have since been the steadiest, supporters of the movement. Long before any of our industrial centres woke up to the fact that they were being outdistanced in technical skill by foreign competitors, public attention was called to the subject in London. It had hardly been mentioned during the long and excited debates on the Elementary Education Act of 1870. No one seemed to be aware then that France, Germany, Austria, and other countries had advanced far beyond elementary schooling.

## OUR PIONEER TECHNICAL COLLEGE.

In 1876, when the scheme of a central technical college was first mooted in London, "both on the Continent and in America well organised and equipped colleges of that class had been in operation for several years, some of the principal being the *École Centrale des Arts et Manufactures* of Paris, founded in 1829; the Technical High Schools of Munich, Hanover, Karlsruhe, Stuttgart, and other towns in Germany (that of Berlin was not founded till 1879); the *École Polytechnique Fédérale* of Zurich, founded in 1855; and the Massachusetts Institute of Technology in Boston, founded in 1861." In July 1876 a preliminary conference was held by the Livery Companies, and a resolution adopted in favour of "educating young artisans and others in the scientific and artistic branches of their trades."

A committee was formed of representatives of the Corporation and Guilds of London to see in the first place what funds could be raised. This having been ascertained, a second meeting was called early in 1877 to consider how the promised funds might be best used. Reports had meanwhile been obtained by the committee from Professor Huxley and a dozen other eminent scientists and educationists. With the help of these reports a programme was drawn up of a central institution or college, the functions of

which were to be threefold—first, advanced education in industrial science; second, examining in technological subjects; third, promoting local schools for artisans and workmen.

In due time all these three functions were realised, and they are being carried on to-day with vigour and success. In 1878 the City and Guilds of London for the Advancement of Technical Education was founded; in 1880 it was incorporated; and in 1881 the Prince of Wales (now his Majesty Edward VII.) laid the foundation of the Central Technical College in Exhibition Road. At the same time he became president of the Institute, and has ever since shown a lively interest in its progress. The new building was opened by him in 1884, but the Institute had then been at work for several years in humbler quarters. As soon as it was formed in 1878 it engaged a number of rooms in the Middle-Class Schools in Cowper Street and fitted them up as laboratories and workshops. There it began the evening classes for artisans and workmen, out of which arose the Technical College in Finsbury. South London was soon afterwards provided with an Art School, which continues to flourish in Kennington Park.

When fully developed, the scheme of the City and Guilds of London assumed the form of a parent institute with three auxiliaries—the Central Technical College for teaching of university grade, the Finsbury College for

younger boys taking a two years' course, and the Art School. The latter two have followed out their original design with little variation, but the Central Technical College has become more specialised than was originally intended. According to its first syllabus, "the main purpose of the instruction given in this College, which is of a university character, is to practically demonstrate and teach the applications of the different branches of science to various manufacturing industries."

But it had evidently been overlooked that London possessed few great industries calling for technical skill in sufficiently large volume to maintain a separate teaching staff with lecture-theatres, class-rooms, laboratories, workshops, &c. And none of these industries were within hail of South Kensington. Nevertheless the new College started bravely with several diploma courses, which have now settled down to three—civil and mechanical engineering, electrical engineering, and chemistry. The predominance of engineering is proved by the large number of students taking these two courses and the small number who are specialising as chemists. All the students have to devote a certain amount of time to chemistry, but in the last completed session (1905-6) there were only 26 taking the full chemistry course, as compared with 192 taking the full civil engineering course and 135 the electrical engineering course.

On an average, about 200 candidates enter



annually for the matriculation examination in September. In 1904 and 1905 the actual number was 203, but in 1906 it fell to 184, partly owing, perhaps, to an advance in the fees from £30 to £36. The average age of the entrants was between eighteen and nineteen years, and the variety of training they had undergone was very remarkable. Very few of them came from universities or university colleges—in 1906 only four and in 1905 only two. Neither did many of them hail from other technical colleges or schools. These numbered in 1904 only six, but the next year they increased to ten, and in 1906 to seventeen.

A considerable number came direct from works, and were, presumably, either self-taught or evening classes students. Of these there were 19 in 1904, 22 in 1905, and the same in 1906—a very steady, if not progressive, supply. Private students varied during the three years from 10 to 19.

But the chief sources of supply are the secondary schools, metropolitan and provincial. These furnished in 1906 34 and 69 respectively. It is significant that London and the suburbs, which ought to be the chief recruiting-ground for technical science students, provided only one-sixth of the whole, and just half as many as the provinces sent up. Comparatively small as the London supply is, it appears to be on the decline rather than on the increase. It has fallen from

58 in 1904 and 68 in 1905 to only 34 in 1906. Neither is the supply of students from provincial secondary schools growing as it ought to do. In 1906 it was only 69, as against 81 in 1905 and 98 in 1904. The most progressive source of supply is colonial and foreign institutions. This grows steadily, having advanced from 9 in 1904 to 21 in 1905 and to 24 in 1906.

It is serious enough that more than an eighth of the students who enter this, our chief engineering school, should be colonial or foreign born. But it is worse that a still greater proportion of those who obtain the diplomas of the Institute should come from abroad. The number of foreign names in the diploma list of last year (1906) is quite noticeable.

While this book is going through the press an important change is taking place in the status of the City and Guilds Central Technical College. Acting on the recommendations of a Departmental Commission, presided over by Mr Haldane, the Board of Education has decided to combine all the science schools at South Kensington into an Imperial College of Science and Technology. This new institution comes into existence on the 1st January 1908, and a description of it will be found in Chapter VIII. It absorbs the City and Guilds Central Technical College, which will give up chemistry and become the engineering department of the new Science University.

## THE MANCHESTER SCHOOL OF TECHNOLOGY.

The Municipal School of Technology at Manchester continues to deserve the high compliment which Mr Balfour paid to it when he opened its palatial home in 1902. "This building," he said, "is perhaps the greatest fruit of this kind of municipal enterprise in the country. . . . Nobody can go over this building, observe its equipment, study even in the most cursory manner the care which has been devoted to it, without feeling that the Corporation of this great city have set an example worthy of the place they hold in Lancashire, worthy of the place they hold in Great Britain."

Technical education in Manchester has grown step by step from the humble Mechanics' Institution which was founded in 1824. It was one of the oldest in the United Kingdom, though not the very oldest, the pioneer institute having been founded in London in 1820. But it may claim to be the oldest institute with a continuous history. Twice its name has been changed and modernised, but the soul of the old Mechanics' Institute survives in the Municipal School of Technology.

For thirty-three years, from 1824 to 1857, it led a busy and useful life in a modest building in Cooper Street. Thence it moved to larger premises in David Street, now called Princess Street. There its courses of popular lectures in

science and literature, its evening classes, its industrial and art exhibitions, and its high-class concerts, educated the people up to the more ambitious ideals of our own day. In 1883 the Mechanics' Institution blossomed into a Technical School, avowedly devoted to "the technical instruction of the working class in the arts and industries." Manchester was undoubtedly a pioneer of technical education, as it had also been of mechanics' institutes. So much practical interest was there shown in the movement that, when the Royal Commission of 1888 was appointed to inquire into the causes of the rapid industrial progress of foreign countries, two Manchester men, Sir H. E. Roscoe and Mr John Stagg, were asked to join it.

When the City and Guilds of London Institute began its operations in 1876, Manchester welcomed its assistance. Its scheme of technical instruction was adopted, a new governing body was elected, and additional accommodation was provided for carrying it out. This first Technical School grew and multiplied in David Street, until what had seemed lavish arrangements were left far behind. Several events now occurred which gave a strong impetus to the movement. The State, acting on the recommendations of the above Royal Commission, recognised its duty in the matter, and two Acts were passed, one in 1889 and another in 1890, which placed an annual grant of over three-quarters of a million sterling

at the disposal of the local authorities for the promotion of technical instruction.

In addition to its share of this grant, Manchester received a windfall from the Whitworth legatees. They projected a Whitworth Institute of Art and Industry, which was to have taken under its wing the existing Technical School and the School of Art. As part of this scheme they built and equipped a Textile School in Peter Street. Another windfall came from the Royal Jubilee Exhibition of 1887. Its surplus of £43,000 was allocated among the various science and art institutions in the city—£20,000 for a museum in Whitworth Park, £10,000 for extending the School of Art, and the balance of nearly £14,000 toward a new School of Art. Then the idea occurred to some one that these various funds and institutions might be better administered by one central authority than by two or three. With commendable self-denial the Whitworth trustees made a complete transfer of their institutes to the City Corporation. This cleared the way for a further extension of the programme. In fact, it rendered possible the magnificent scheme which has since been realised.

The municipal *régime* began in 1892, and the City Corporation, as soon as it took command, set to work on the plans for a new technical school. The first and greatest difficulty—that of finding a suitable site—was handsomely removed by the Whitworth legatees in offering a

block of land 6400 square yards in extent. This was not only central, but it had interesting associations, having been formerly occupied by the Whitworth engineering works. An adjoining block of 900 square yards being obtainable, the Corporation purchased it, and thus before building was commenced ample elbow-room had been secured. The construction and equipment of the new school took seven years—from 1895 to 1902—but the result fully justifies the time spent upon it. Neither the Germans nor the Americans can show anything better of its kind.

The British public, it is to be feared, notwithstanding all the talk they have heard about technical science and technical education, are still hazy on both points. A short description of a technical school, which really deserves the name, may help to clarify their minds. The building in which it is lodged is six storeys in height, and being at a corner it fronts on two streets. This long frontage, combined with two large internal wells, gives it such a supply of light and ventilation that every class-room is perfect in these respects. The main entrance in Sackville Street opens on a magnificent central hall, marble floored, and lined with antique sculptures. On one side are the administrative offices and the council chamber, on the other are the class-rooms and laboratories of the two chief departments—physics and textiles.

The principal feature of the first floor is the

examination hall, which is also used for public lectures. Surrounding it are the library and reading-rooms, with a suite of laboratories and class-rooms for mathematics, and electrical, mechanical, and sanitary engineering. The second floor is entirely devoted to lecture-rooms, class-rooms, and laboratories. Half-a-dozen departments are carried on here—engineering, architecture, the building trades, photography, printing, and electrical engineering. On the same floor are the students' common room and restaurant, which have an experimental bakery attached to them. The third floor contains the chemical laboratories, organic and inorganic, special laboratories for metallurgy and brewing, the principal chemical lecture theatre, and a series of workshops for joinery, plumbing, and sanitary engineering. More interesting workshops are to be found on the fourth floor—for house-painting and decorating, bookbinding, and lithographic drawing. Here also is the greatest novelty in technical education—a completely equipped brewhouse presented by Councillor Holt. Alongside of it are the dyeing laboratories and the gymnasium. The building is appropriately crowned with an astronomical observatory, which rejoices in a powerful equatorial telescope, the gift of Mr Godlee.

The basement of the technological school is the busiest and most remarkable part of it. Its vast area is subdivided into a series of work-



shops and laboratories. They include a fully equipped spinning-room, in which students can see every kind of machine used in the trade, and can learn to work them; a weaving-room equally alive and complete; machine-rooms crowded with gas and steam engines; laboratories for experimental motors and dynamos; a collection of the latest hydraulic appliances; and, not the least interesting, a room for testing constructive materials—stone, iron, wood, cement, &c. The testing plant is not only of great educational value, but it renders practical service to the building and engineering trades of the city. Various municipal departments as well as private employers make frequent use of it.

Large as the School of Technology is, it cannot accommodate all the technical arts practised in Manchester. The bleaching, dyeing, printing, and paper-making industries are installed in a separate building close to the main school, though not actually adjoining it. The intervening space belongs, however, to the City Corporation, and is held in reserve for future extensions. When it is built on there will be an immense range of workshops and laboratories, forming a complete microcosm of industrial Lancashire. On the ground floor of the bleaching and dyeing annexe every process is gone through “on a work’s scale.” The teaching is, consequently, as real and precise as in an actual shop. The only exception to this wise rule is in the paper-making,



where, in order to economise space, the machines have been made narrower than full size. They are, in fact, only 24 inches wide, but all the details are exactly the same as in the largest machines. On the upper floor of the annexe are the experimental laboratories, where a skilled staff of chemists are continually employed in testing materials, colours, &c.

All that sounds like business. It shows that in the scramble for technical education Manchester has understood what it really needed and how to obtain it. Moreover, it has been fortunate in having generous citizens and capable administrators to assist in working out a scheme adapted to its local conditions. Anywhere but in Manchester this splendid institution might have been an utter failure, and even in Manchester it might have failed if there had not been a local demand for the various kinds of technical training that it provided.

## CHAPTER V.

HIS TECHNICAL SCHOOLS (*continued*).

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THE GLASGOW AND WEST OF SCOTLAND  
TECHNICAL COLLEGE.

ENGLAND has reason to be proud of its technical colleges and of the work they are doing. They are wonderful institutions to have been built up, as it were, from the foundation in twenty years or less. But Scotland has even more reason to be proud of the magnificent Polytechnic which within the past seven years has sprung up in the heart of Glasgow. It is known as the Glasgow and West of Scotland Technical College. When I first visited it I was fresh from an inspection of some of the famous institutions of the same class in the United States. I had been over the Drexel Institute in Philadelphia, and the Pratt Institute in Brooklyn, which are regarded by professional authorities as models of what technical education should be.

My surprise may be imagined when the late

Mr Copeland, the Chairman of the Governing Board of the Glasgow Technical College, told me he could show me something bigger than either Pratt or Drexel. Startling as the statement was, it proved to be within the mark. In extent of accommodation, in variety of equipment, and in number of students, the institution over which Mr Copeland so long and so ably presided is an easy first, not only in our own country but possibly in the world. If there is a larger and better anywhere it may be in Germany, but even that is doubtful.

Altogether six thousand young people are undergoing a thorough, and not a mere scrappy, technical education. Everything about it is serious and full of purpose. The Board of Governors makes an imposing show of scientific and educational talent. Every local institution in any way akin to the College, from the Glasgow University downward, is represented on it. The City Council, the Merchants' House, the Faculty of Procurators, the Faculty of Physicians and Surgeons, the Royal Philosophical Society, the School Board, the City Educational Endowments Board, the Trustees of Anderson's College, the Institute of Engineers and Shipbuilders, the Institute of Architects, and Hutcheson's Educational Trust, have all helped to provide expert administration. A large proportion of the twenty-nine governors are professional men. Including the chairman himself, there are no

less than four civil engineers, while a good many more hold scientific diplomas.

Such a host of experts has furnished very strong committees for every department of college work. The Committee on Mathematics, Natural Philosophy, and Natural Science has three University professors on it. That on Chemistry and Metallurgy is strengthened by representatives of five local works—a colliery, an iron mine, dye works, chemical works, and Nobel's explosives. Through the Committee on Engineering close personal relations have been formed with the Fairfield Shipbuilding Company, the North British Locomotive and Engineering Company, and three other of the largest local engineering works. Attached to this is a sub-committee on the boilermaking classes, which has for its technical advisers the Professor of Prime Movers, the Senior Engineer of the Board of Trade in Glasgow, Lloyd's Principal Engineer Surveyor, and two representatives of the Iron and Steel Shipbuilders' Society.

But while Glasgow is thus particular about obtaining the precise kind of education for each trade that is really needed, it is not so successful in other and equally important directions. From the personal interest that large employers take in the College itself, it might be inferred that they would be equally keen in getting hold of the best students for their own works. This cannot be truly said, however. If a search were

made for the men who had come out highest, say, in the engineering or metallurgy classes, they would not be found in Glasgow, or even in Scotland.

Whether this be due to the lukewarmness of Glasgow employers or to the natural desire of pushing young men to see the world, cannot be decided without more exact data than have yet been collected. In either case it is a serious matter for an institution like the Glasgow and West of Scotland Technical College to be in doubt about whether it is working for the benefit of its own district or for the benefit of other people. This point was brought home rather forcibly to certain professors and officials of the College during a visit which they paid some time ago to the British Westinghouse Works, near Manchester. In almost every shop they went through they found two or three of their own students. As one of them put it, "They could not go round a machine without running up against a Glasgow laddie." As a compliment to their teaching this was, no doubt, gratifying, but it looked as if Glasgow were keeping the shadow to itself and letting the Americans have the substance.

This is an obvious danger in every successful scheme of training for a special local industry, such as marine engineering in Glasgow, cotton manufacturing in Manchester, and woollen manufacturing in Leeds. The value of every trained

student to the district that trains him must depend on whether he stays there and assists to develop local trade, or migrates to another district, possibly to another country, and gives it all the benefit of his costly education. This contingency does not seem to have presented itself very forcibly as yet to the administrators of any of our technical colleges, but it cannot be much longer ignored. Colleges differ widely in this, as in nearly every other respect. Some take very little trouble about the ultimate future of their graduates, while others take a good deal. For a contrast to the Glasgow policy we need not go further than Edinburgh, where, as will be seen in our account of the Heriot-Watt College, an opposite course is followed. A striking characteristic of the latter institution is the anxiety shown to bring students at the earliest moment into practical contact with local industries and to find employment for them there.

Glasgow, above all places, is entitled to get the utmost benefit it can from its technical students. No city in the United Kingdom has been so generous to them or has put its hands so deep into its own pocket on their behalf. Everywhere else voluntary subscriptions have been a comparatively small item in the funds raised for technical education. In Glasgow they have done everything. The School of Technology at Manchester is, as has been already explained, a municipal institution. The Textile School at Leeds

belongs virtually to the Clothworkers' Company of the City of London. But the Glasgow people have put £200,000 of their own money into their Technical College. The only outside contributions of any consequence were £25,000 from Mr Carnegie and grants of £10,000 from the Scottish Education Department. A large portion of the fund was raised in guineas and five guineas. All the incorporated trades voted sums of £25 to £100, and the workmen raised among themselves a very respectable total.

The main reason for the exceptional liberality of Glasgow toward technical education is no doubt the superior wealth of the city and district. But there is another one still more creditable. Among the youth of the city there was a strong and widespread desire for technical training. In many cases it was so strong that it had to be checked rather than stimulated. Apprentices after working from six o'clock in the morning to five or half-past five in the afternoon would travel miles by train or tramway to the College. They would take two classes of an hour each, and get home at ten or eleven o'clock, to be up again next morning at five o'clock or earlier. This eighteen-hours' round they would battle through for three or four days a-week. It probably broke down a good many of them, but it made splendid men of the survivors.

The inhumanity of the system is, however, beginning to be recognised. The College author-

ities have made a rule prohibiting any boy working full hours to attend more than three nights a-week. Kindly employers have done still better by allowing apprentices to come in at nine o'clock on the mornings after their night classes. One day, perhaps, they may go further and shorten the hours of apprentices generally. Simply as a question of health and physical endurance it should be self-evident folly to expect a boy of fifteen or sixteen to bear as prolonged a strain as a full-grown man. When there is added to that the extra strain of several hours' brain-work in the evening, while the full-grown man is resting or enjoying himself, the thing becomes as cruel as it is foolish.

From the employers' point of view it is very doubtful policy. A better class of apprentices might be obtained by allowing them to start an hour or two later in the morning, while their class-work in the evening would gain immensely by it, both in quality and quantity. If technical education is to become the universal gateway to industrial careers, the middle-class boy will have to join in the scramble along with the working-class boy. Existing shop hours are too long for both of them, and other conditions which handicap the middle-class boy ought to be reconsidered.

We have now in most of our large industrial centres an embarrassing wealth of technical and commercial education. The only remaining difficulty is how to get it fully utilised. Glasgow



alone is turning out trained chemists, metallurgists, engineers, and architects by the hundred annually. Where and how do they find employment?

That all these classes are admirably organised and taught there cannot be a doubt. In the new College buildings lately completed there are more class-rooms, laboratories, libraries, and public rooms, all perfectly equipped for their work. The engineering laboratories have every kind of measuring and testing machines in actual use. Lathe-room, foundry, smithy, and pattern-shop are all models of their kind. The Governors are particularly proud of the latest addition to their plant—the printing and allied trades department. In their last year's report they state that “it has become firmly established during the session, and the equipment is not excelled by that of any other British school.” It is not even approached by any other school, except Manchester.

Altogether, what a contrast this is to the old-fashioned days when chemists, engineers, and metallurgists had to pick up their education anyhow. But in curing old defects we may be creating worse trouble for ourselves if these technical prodigies are turned out faster than the world can find room or make work for them. With that proviso the Glasgow and West of Scotland Technical College is one of the most up-to-date educators of our time. From the top floor

to the basement it is thoroughly modern, both in plant and in teaching.

#### THE HERIOT-WATT COLLEGE, EDINBURGH.

It would be strange if in a city so deservedly celebrated as Edinburgh is for its educational institutions technical education had been overlooked. The capital of Scotland continues, however, to be overshadowed by its literary traditions. Commerce and applied science, though they are making great advances in it, have still to be very respectful to the classical professions. The University and Parliament House are pleased to take a patronising interest in recent creations like the Heriot-Watt College, the principal representative of technical science. The old and the new wines will no doubt blend very well when the fermenting process is over, but it is hardly finished yet.

As a centre of technical science Edinburgh has advantages and disadvantages. Its chief advantage is its educational atmosphere, which envelops everything. "Modern Athens" lives up to its favourite pet name. From the Castle to the Cowgate and from Holyrood to the Haymarket it is one great school. With the exception of a few breweries, printing offices, and engineering works, it makes nothing and does nothing but pure brain-work. Its staple industries are law,

medicine, theology, and music. These so completely occupy the stage that there are only a few odd corners left for the newer sciences. But the taste for learning is universal, and educational discipline is highly developed—two favourable conditions for all sciences, pure and applied alike.

On the other hand, Edinburgh as a technical education centre suffers from having no great local industry offering an unlimited field for technical students. At home and abroad I have found it an invariable rule that the most successful technical schools are those with special local industries behind them. Glasgow has its shipbuilding and engineering, Manchester its cotton-spinning and weaving, Leeds its woollen trade, and Sheffield its steel-manufacturing. These furnish at once a backbone for technical organisation. Students have not to be asked to come and learn scraps of sciences which may or may not be useful to them afterwards. The technical college can say to them, "come and be trained for this or that kind of work in which situations are waiting for you." Having a backbone like this makes the teaching more definite and efficient, not only as regards the special local subject, but in all the others. It gives a feeling of greater reality and purpose to the whole programme.

Edinburgh has no outstanding local industry, and not even a great variety of secondary ones. The managers of the Heriot-Watt College have

consequently had to beat the air to a considerable extent. But all the industrial material at their command has been made the most of. The fact of there being so few industrial openings for students has not discouraged them. On the contrary, it stimulates them to special efforts, which have been rewarded with a surprising amount of success. There is hardly a large establishment in Edinburgh or the neighbourhood which does not grant special privileges to the students and graduates of the College. This is only, of course, what ought to be, but it has nowhere been carried to the same extent as in Edinburgh.

One explanation of this may be that apprenticeship was always an essential feature of the old Heriot Hospital *régime*. Every boy who passed through the hospital knew from the start that he was not to be schooled "at lairge," but was to be brought up to a trade. When he had got his "Three R's" he was duly apprenticed and looked after until he had served his time. Then he was started in life with an outfit and George Heriot's blessing. The percentage of cases in which he turned out well would astonish our Education Committees, who cram boys up to a certain age with "Three R's" and then turn them adrift to shift for themselves. Heriot's Hospital, like its founder, has suffered a great variety of criticism, ignorant and otherwise. In its unregenerate days it had faults, no doubt,

but one thing may be remembered to its credit: no other institution of its kind can compare with it as a trainer of skilled labour.

To the union which took place in 1885 between it and the Watt Institution it thus brought not only a large money dowry, but educational gifts quite as valuable. The Watt Institute had also an exceptionally good record in technical teaching of the older sort. It had trained several generations of Edinburgh workmen, and fitted many of them for high positions in the world. Throughout its long history of over sixty years it had steadily developed, increasing its classes and improving its methods year by year. In its humble way it had become almost as distinctive an Edinburgh institution as Heriot's Hospital. Its evening classes in science and modern languages were so good that many University students attended them. The School of Arts, out of which it grew, was, in fact, born under the auspices of the University, and the then Principal, Sir David Brewster, was one of its godfathers.

It is a remarkable circumstance that London, Glasgow, Edinburgh, and several other provincial cities, owed their first impulse in the direction of industrial education to the same small group of pioneers. Of these Dr Anderson, the founder of Anderson's University in Glasgow, though not an educationist himself, is entitled to be considered the earliest. The next was Dr Birbeck, at one time head of Anderson's University. With the

teaching experience he gained there he moved afterwards to London, and founded the Institute in Chancery Lane that still bears his name. After him the brothers Horner, of Edinburgh, best deserve mention perhaps. They were the sons of an Edinburgh merchant, Mr John Horner, and it has fallen to the lot of few men to give so many new impulses as they did to the spread of scientific and economic knowledge among the people. The elder brother, Francis Horner, was one of the founders of the 'Edinburgh Review,' and the Chairman of the Bullion Committee of 1810. The younger, Leonard, is associated with two of the oldest educational institutions in his native city—the School of Arts, which he assisted to establish in 1821, and the Edinburgh Academy, of which he was one of the founders in 1824.

These Edinburgh pioneers had the true idea of technical education as distinguished from mere manual training. They saw that mathematics and the other abstract sciences which then flourished in Edinburgh were mere ornamental knowledge limited to a select class. There had so far been little or no attempt to apply them to any local industry or handicraft. Mr Leonard Horner found out in casual conversation with a watchmaker that his apprentices received no mathematical education. The watchmaker admitted that it would be useful to them if they could have it brought within their means. He

afterwards became a zealous supporter of Mr Horner's scheme for a "School of Arts" on similar lines to Anderson's Institution which was already at work in Glasgow. Other employers joined, and Mr Horner's University friends became enthusiastic over the new movement.

The School of Arts was, as has been said, launched under the personal auspices of Sir David Brewster, the then Principal of Edinburgh University, several professors, two or three Lords of Session, and various other eminent Athenians. It received, in fact, so much classical and scientific patronage as to be in danger of missing its way altogether, like the South Kensington movement of a later date. But the Edinburgh professors and Parliament House men knew what they were about. In their original prospectus they stated exactly their object, and the means which they were to employ for its realisation. The title they adopted was self-explanatory—"School of Art for the better education of the mechanics of Edinburgh in such branches of physical science as are of practical application in their several trades."

The jargon of the technical educators of our own day, and the hair-splitting distinctions they draw between pure and applied sciences, had not yet been invented. There is a homely terseness and directness about the definition given of the objects of the new association. It was said to have been formed "for the purpose of enabling



industrious tradesmen to become acquainted with such of the principles of mechanics, chemistry, and other branches of science as are of practical application in their several trades, that they may possess a more thorough knowledge of their business, acquire a greater degree of skill in the practice of it, and be led to improvement with a greater security of success."

The advantage of starting thus with a specific object, a distinct programme, and a modest ambition, was shown in the long continued success of the school. Its strong points from the outset were chemistry and natural philosophy, and along with mathematics, which was added later, they have continued to be its strong points down to the present day. For wellnigh half a century these three subjects were taught in the old building in Adam Square to hundreds of students yearly. Teaching so good has seldom been provided anywhere at such an absurdly small cost, or has it ever been turned to better account by students. About £450 a-year of public subscriptions sufficed to cover the deficit on the working expenses. A modern county council could easily spend thousands a-year on the same job, and not do it half as well.

A strong safeguard of the Edinburgh people against extravagance was that they never did anything in a hurry. The proposal to erect a new home for the Society of Arts as a memorial



to James Watt was originally started in 1824, but it did not come to a head till 1851—nearly thirty years later. Even then it was a characteristically frugal scheme, having cost only £2500. For that sum, which was partly subscribed and partly derived from the savings of the school, the house it had long tenanted in Adam Square was purchased. There the old school, now re-christened the Watt Institute, entered on a new and wider career. While its four standard subjects—mathematics, chemistry, natural philosophy, and mechanical drawing—continued to have its chief attention, others were added from time to time—generally at the request of the students.

The first of these extras appears to have been French, the next English Literature, and the third German. These classes were opened in 1843, 1851, and 1869 respectively. The last-named year witnessed another great advance—the opening of the Institute to women. The speedy effect of this was such an increase in the number of students as to overcrowd the old building and necessitate a fresh move. A suitable site having been obtained in Chambers Street, opposite the Government Museum of Science and Art, what were then considered magnificent premises were erected. The new building was ready for the opening of the winter session of 1873-4, and from this period the Watt Institute has ranked as a higher technical college.

The transition from the Horner programme of eighty years ago to what may be called the Charlottenburg *régime* is being carried out in Edinburgh with characteristic prudence and caution. It is not altogether a matter of choice to go slow—lack of money has quite as much to do with it,—but all the same it is a safe policy.

In the teeth of great limitations and inconveniences, Principal Laurie and the able professors associated with him are doing a very large amount of the right sort of teaching. Both the day and the evening classes are admirably organised for their special work. The latter continue on the old lines of the Watt Institute, with many modern additions. In point of variety the bill of fare here is the most remarkable I have yet seen. It offers the evening student, male or female, a choice of eighty-one classes, beginning alphabetically with accounting and ending with wood-carving. One night in the week the industrious apprentice may revel in bacteriology, the next he may try his hand at gasfitting, the next he may struggle with the problems of municipal engineering, and from them he may let himself down to “grocery lectures.” This vast round of educational recreation will cost him only from 5s. to 10s. per session of six months.

The friends of the old Watt Institute may, however, claim that its real successor is not

the promiscuous evening classes of the new *régime*, but the day classes. These are certainly more on the old lines, and they exhibit something of the old simplicity and thoroughness. They are limited to what have always been the standard subjects of the Institute—mathematics, engineering, and chemistry. The three years' engineering course comes as near as possible to an ideal training for the sons of middle-class and working-class parents. It commands teaching of university rank; and if the appliances leave much to be desired, that defect will no doubt be remedied by-and-by. The fees are so moderate as to be hardly worth collecting—one guinea up to four guineas per session, lectures, tutoring, and demonstrations included. Remissions and exemptions are granted to artisan students on evidence of fitness for the work. Moreover, any student who passes the University Preliminary Examination may have his fee paid for him by the Carnegie Trust.

Whatever else may be said about technical education in Edinburgh, its cheapness must be admitted. And as to its quality, the old traditions of the Watt Institute are being well maintained.

## CHAPTER VI.

## HIS COMMERCIAL SCHOOLS.

DURING the past ten years no provincial city in England sensible of its own dignity has failed to provide itself with a first-class modern university. The most distinctively modern features of these new universities are their Technical and Commercial Faculties. On these they pride themselves most strongly, and in some respects with good reason, though in other respects the reality still falls considerably short of the ideal. The new Faculties profess to be conducted on business lines, and claim to be judged by business standards. While the old universities may sleep comfortably on their traditions, the new ones have to show tangible results.

In this practical business sense let us put the question, What is the real state of our higher commercial education? We are continually telling each other that if English commerce is to hold its own in future it must be better taught, better organised, and more intelligent. Many schemes have been propounded for realising these

much-needed objects. Both London and the provinces are overrun with experiments of one kind or another in commercial education. They differ widely in magnitude, in design, and in character—so widely, indeed, that they have few features in common. All of them are still in the initial stage, and their conductors would be the last men to say that they had reached an ideal state of efficiency.

On the other hand, it must not be supposed that they are making no progress. For the short time that they have been in operation they can show some remarkable results. A scheme so completely novel had a lot of preliminary work to get through before it could reach its real starting-point. Suitable buildings had to be provided, organisers had to be selected, plans of study to be framed, and teaching staffs to be enlisted. In the oldest of our commercial schools these preliminary difficulties have been very nearly overcome. In the younger institutions they are still being grappled with. But old and new schools alike have run up against the worst of all obstacles to educational progress—namely, public indifference. Commercial science has thrown its doors wide open, and its appointed teachers are ready to teach, but there is no rush of eager students.

The immediate and most urgent question is, What can be done to utilise, in a reasonable degree, the large and costly provision that has

of late years been made for higher commercial education? The answer to that must depend on the causes of the poor support which these costly institutions have so far received. Can it be that they have set up an unattainable ideal which will have to be lowered in order to reach workable materials? Have they been wrong in imagining that commerce can be elevated into a science and a medium of human culture? Can the old-fashioned idea be right after all—that business life is exclusively practical and admits of no theoretical training? One might be almost driven to that conclusion by the experience of Manchester and Liverpool; but fortunately more encouraging results are to be seen in other parts of the world. Germany and the United States have not only proved that scientific method is applicable to commerce, but they have made the application. They have not only demonstrated that business life admits of intellectual training, but they have boldly and logically recognised a science of commerce and placed it in all respects on a level with their older academic curricula.

A general survey of the machinery of commercial education in England shows—

First, a considerable network of evening classes doing more or less rudimentary work of the bread-and-butter sort.

Second, a number of mixed economic and commercial schools, in which the technical side does not appear to be highly developed.

Third, a very few fully organised Faculties of Commerce in connection with our modern universities.

Here it may be asked, Why do these new Faculties progress so slowly? Why is their power of attraction so much smaller than that of the older universities, which confessedly offer a much narrower and less interesting curriculum? Evidently the old prejudice against commerce as something shabby and vulgar still lingers in academic circles. For the sons of the wealthy, Oxford and Cambridge are still the chief gateways to social and political status. They can give a special hallmark to every aspirant to the so-called "learned professions." Whatever the education they provide may be in itself—good, bad, or indifferent—it offers a choice of definite careers in the Church, at the Bar, or in the Army. All the younger universities, through the mere fact of their youth, are handicapped in their competition with Oxford and Cambridge by the careers they offer being both less definite and less varied. They are practically limited to scientific, industrial, and commercial pursuits. If logic had much to do with modern education, the more up-to-date the university the closer would be its relations with real life and the greater its opportunities of making a future for its alumni. But in fact it is quite the reverse. The social class which requires the highest possible education, and could make the best use of it,

has given its future almost entirely into the hands of the two ancient universities. What parents of this class are most concerned about is not the education itself but the career to which it holds the key.

Hence technical and commercial education of university rank is at a great disadvantage compared with classical education as regards social and professional opportunities. Higher commercial education is in this respect the worst situated of all. It is the youngest of university faculties; it offers fewest academic prizes; it has the most vague and uncertain future. A teaching institution cannot ask of young men their whole attention for three or four years, to say nothing of pretty heavy fees, without being able to guarantee to them some tangible return. "Bachelors of Commerce" will not multiply and increase until the degree acquires a practical value as definite as that of the corresponding qualifications for the Church, the Bar, or the Army. In all four cases it is the same sort of youth that is wanted, and in order to secure him in adequate numbers the commercial profession will have to be put on a level with the other professions.

Why, indeed, should it not be? Is there not quite as much intellect and intelligence required in the conduct of a large bank or a shipping business, or a factory employing thousands of hands, as in writing sermons, or feeling pulses,



or humbugging juries at the Old Bailey? There is more brain-work done every day in a single street in the City of London than would carry any ancient university through a whole term. Even in moral qualities City life may be nowise inferior to the academic life which looks down upon it so superciliously.

So far as we can ascertain, few of the great public schools have even yet practically recognised the Faculties of Commerce, or made any attempt at special preparation for them. It is an open question, indeed, if they should go far out of their way for that purpose. They may better serve the Faculties of Commerce by furnishing them with raw material of good general quality than by trying to specialise it. But the first requisite of all is that they should be a little more sympathetic.

In every public school, from Eton downward, every grammar school, and every secondary school, commerce should be recognised as both a science and a career. Boys going in for it should be as much encouraged and cared for as if they were destined for one of the "learned professions." Without an inconvenient amount of specialising, the whole modern side of such schools could be kept in touch with the commercial as well as with the scientific faculties of the universities. And having overcome the prejudices of the headmasters, the next step might be to attack the snobbishness of parents. Higher commercial

education has inconsistent supporters as well as inconsistent opponents. Of the former the most notable are the fathers who will make any sacrifice for it except to try it on their own sons. They will work for it and subscribe liberally to it, but they will not have it in their own families. They may have social or political ambitions, in which case their boys must go to Oxford or Cambridge. Or they may be of the old school who believe that business can be best learned in the shop or the office. Their boys go direct from school to business, and the Faculty of Commerce falls, as it were, between two stools.

But for foreign and colonial students the initial struggles of our new commercial schools might have been even harder than they were. Here again arises a two-sided question. Apart from the obvious folly of providing education of the most expensive and valuable kind for other countries, there is the serious prospect to consider of these foreign students by-and-by becoming active rivals of British merchants. The alien question has many ramifications, and this latest one is not the least important. First of all, it shows us how much more interest is felt abroad in higher commercial education than is felt in England. It indicates, too, how much more systematically the problem is being handled abroad than it is by ourselves.

These foreign students, the Germans in particular, are picked youths, being trained as com-

mercial experts. When they have learned all we have to teach them, they may go on for a year or two to France, from there to the States, and thence perhaps to South America. When they have made the grand tour of the commercial world, they either return home or settle down in one of these foreign countries to exploit it thoroughly. Already there are thousands of such foreign experts among us. Liverpool is being gradually overrun by them, and some of its principal import trades will soon be in their hands. Even Manchester has a large foreign leaven, and any one may see how rapidly the City of London is becoming tributary to Berlin and Paris.

If intelligent foreigners will pay our commercial schools the compliment of appreciating them better than we do ourselves, it would be churlish to exclude them. Their example might, however, stimulate us to a little more appreciation at home. It proves that these schools have a necessary place in any advanced commercial system, which cannot be neglected without danger to the whole. Moreover, their place cannot be adequately filled with mere brick-work and laboratories. It calls for live teachers and live students to carry on between them real educational work. The teachers are there, waiting for the learners who dribble in by twos and threes, where there should be hundreds of them. They will not come in as they should do until parents and headmasters realise that commerce is as liberal a profession as law or

medicine or theology, and that it demands an equally scientific training.

Increasing the supply of students will not of itself completely solve the dilemma in which our newly founded Faculties of Commerce find themselves. When the students have become "Bachelors of Commerce," practical work will have to be discovered or provided for them. They must have careers opened up for them of at least equal value to those of the average parson, lawyer, or doctor. The existing choice is by no means great, but with a little consideration it might be much enlarged. The popular idea that private trade and industry offer an ample field to commercial graduates is, we fear, as wide of the mark as popular ideas generally are.

We have already alluded to the reluctance of manufacturers and merchants to put their own sons through the business curriculum. A similar lukewarmness is shown toward commercial graduates seeking employment. The question is still being discussed whether the college boy or the office boy has the best chance to get to the top. The odds at present are rather against the college boy, but a few liberal-minded employers have been found who will give him a chance.

Of course it is only in large and wealthy establishments that the highest class of commercial experts can hope to find suitable employment, and the annual vacancies there are not likely to be very numerous. A majority of the commercial

graduates may have to go farther afield. There is no reason why they should be limited to private establishments if other useful outlets can be found for them. The Government, the municipalities, the banks, the railways, and many other large employers, are quite as much in need of commercial experts as private firms are.

Four or five Government departments might make good use of the Faculties of Commerce. To begin at the very top, a three years' course of business teaching, followed by an appropriate examination, would be a far better preparation for the upper grades of Treasury officials than the one now in vogue. The Consular Department of the Foreign Office might be largely recruited through the same channel. It would be no less applicable to the new Ministry of Commerce which is one day to arise out of the historic ashes of the Board of Trade; also to the higher officials in the Post Office and the Post Office Savings Banks.

If the Treasury, the Board of Trade, the Foreign Office, the Colonial Office, and the Post Office were to enter into direct relations with the new Faculties of Commerce, they might have the pick of the boys leaving secondary schools specially trained to meet their requirements. The same advantage is open in a smaller degree to banks and railways. They might select their own boys, and arrange with the Faculties of Commerce to educate them on certain lines. This alone

would go a long way toward filling the now half-empty commercial class-rooms. It would give to higher commercial education as valuable a cachet as even that of Oxford or Cambridge. It might stimulate the lukewarm, if not actually dormant, sympathies of the public schools. The snobbishness of the Society parent who uses Eton and Oxford as stepping-stones to Mayfair might thaw under it.

Faculties of Commerce, from which bright young men could, as soon as they graduated, step into good positions in the national or municipal service, on railways, in banks, or in private establishments, would soon be overrun with candidates. They would swarm in, not from the provinces only, but from the colonies and from India. There would no longer be room for young foreigners, even if they were not otherwise barred. The Professors of Commercial Science would always have enough home material to work on without importing any from abroad. And they would be doing genuine useful work of the kind they set out to do—no make-believe or treadmill about it.

The public departments we have named, as well as our banks and railway companies, all require nowadays men with the commercial training which the new Faculties undertake to supply. A similar class of men are even more wanted in Parliament. Any prospective candidate for the House of Commons intending to do serious work

there, as distinguished from barren debating, can best qualify himself by getting thoroughly grounded in the commercial questions which appear to have been so completely omitted from the education of most of our existing legislators. How many of them would have the slightest chance to escape plucking in an examination for Bachelor of Commerce?

Even the War Office might not be beyond reach of commercial efficiency if its muddlers were taken young and put through a suitable training. At Sandhurst and elsewhere it now does a good deal of so-called education on its own account. The results may have improved somewhat of late, but the utter innocence of business which British officers exhibited during the Boer War proved what sort of education they had been getting before then. If at Sandhurst they had been taught the simplest rudiments of commercial science, might there not have been fewer scandals in the Stores and the Remount Departments? It might have been better, too, for the youths themselves to finish their education at a modern university instead of at a military school where only a certain amount of special cramming was expected of them. The modern university would have given them a large choice of technical and commercial classes taught in a different way to what Sandhurst was. The War Office would also have gained both in money and results. Its young officers would have come to their work



much better qualified and at considerably less expense.

Special military schools, unless of the highest grade, like Woolwich, are a very doubtful advantage. What the British officer needs as a suitable finish to his school education is a year or two of combined science and commerce, such as the new universities are endeavouring to supply.

A novel experiment was made lately at the London School of Economics when, to oblige the War Office, a number of officers were put through a few months' coaching in book-keeping and accounts,—a step, if a very short one, toward business training for the army.

In a few years' time it ought to become a matter of course for a chartered accountant to have graduated in a Faculty of Commerce. The higher grades of bank clerks and railway officials might by the same means not only "improve their prospects," as the saying is, but greatly enhance the interest of their work. Banking with brains, as distinguished from banking with cut-and-dried rules, is a business still in its infancy in this country. Our banks, railways, and insurance companies are all about as much in need of intelligence departments as is the War Office itself. Outside of the Government no one could do more for commercial education than the Institute of Bankers. Why it has not already welcomed the Faculties of Commerce and offered them its cordial co-operation is a mystery, unless,



indeed, its Rabbis are as much afraid of free thinking in Lombard Street as of Chamberlainism.

Last, but not least, municipal administration offers a wide field for commercial graduates. It can hardly be called a virgin field without shutting our eyes to the financial scandals which have lately come to light. These very scandals are a crowning proof of the urgent need for trained business capacity not only among municipal councillors themselves, but among responsible officials, auditors, &c. To say nothing of the Holborn, Poplar, Mile End, and other revelations, every week supplies fresh proof of the laxity of municipal book-keeping.

Several years ago the Joint Committee of the Lords and Commons on Municipal Trading prepared us for such revelations as these by reporting that no really effective system of audit existed among any of the local authorities. A uniform audit was strongly recommended, and an outline was given of its essential requisites. Of course, Parliament has not yet found leisure to attend to anything so prosaically useful, but in course of time it may become qualified to pass the plain everyday laws that the country really needs. One of these laws will give properly trained men a preference in municipal as well as in national administration. Two immense fields will thereby be thrown open to the Faculties of Commerce. And when joint-stock companies, banks, railways, and private employers add their imprimatur to

commercial education, it will no longer be difficult either to get students or to find situations for graduates. Meanwhile there is an undeniable deadlock at both ends of the commercial curriculum.

If the existing cram tests for the higher branches of the Civil Service were all swept away in favour of a three years' course in a properly constituted Faculty of Commerce, the gain in efficiency would be almost incredible. If, too, the municipal authorities, the leading banks, the railways, the insurance companies, and large industrial establishments were disposed to second the efforts of the Government in this direction, it might be easily done by forming special staffs of whom definite commercial education should be required. This is being done to a considerable extent in the United States, and I believe with good results. It gives the commercial graduate both status and opportunity worth struggling for. A similar incentive in this country would soon fill the half-empty class-rooms of our Faculties of Commerce.

But before the Government, the municipalities, the banks, the railways, and other large employers would commit themselves to such a bold experiment they would naturally wish to know how the Faculties of Commerce were to carry out their part of it. They would, of course, be entitled to a voice in the framing of the curricula as well as in the methods of teaching, examination, &c. So

far from making any demur to that, the Faculties of Commerce might be only too glad to concede it. All the time they have been longing for the co-operation of the business men who alone can give practical value to their labours. Suggestions would have been welcomed from the Bankers' Institute for a syllabus of banking classes, from the Chartered Accountants for a practical course in accountancy, from the Stock Exchange for a preliminary training in the mysteries of joint-stock finance, and from any other financial or commercial interest for a scheme of higher education suited to its peculiar needs.

Whatever kind of commercial expert is wanted may, in due time, be produced if teachers and employers will take counsel together over it. As it is, little or no initiative in higher education has come from the employers' side. It has nearly all come from the teachers. They have had to guess at what was most needed and would be likely to suit best. Up to a certain point they have had fairly smooth sailing. There are some general subjects which every one expected to find in the commercial curriculum. At least two modern languages were indispensable. Commercial geography and commercial law were voted in almost unanimously. To have left out political economy would have been an insult to the memory of Adam Smith, though Heaven knows he might acknowledge very little of what is now being taught in his name.

The academic economists have met the demand for higher commercial education in various ways. Most of the new universities include a Faculty of Commerce more or less elaborated. In one or two of them the chair of political economy has simply had a few commercial subjects tacked on to it. In others commerce has been made the main subject and economics the adjunct.

The most thoroughly organised of the new Faculties is that of the Birmingham University. Its Dean, Professor Ashley, brought to the work a wide and varied experience, English, American, and Canadian. His colleague, Professor Kirkaldy, combined business with theoretical training. Together they have laboured hard in two different directions—on one hand to interest parents in commercial education, and on the other hand to interest employers in commercial graduates. Their latest move was to form an Advisory Board of business men to deal with the question of employment. It consists of eight prominent citizens, headed by Mr Neville Chamberlain, who have undertaken to act as intermediaries between the Faculty and local firms able to offer a career to youths with a special commercial training.

In June last the Advisory Board issued a very sensible circular explaining the principles on which commercial students were being trained, and the special qualifications which their training ought to give them. It stated that several

members of the Board were already employing graduates of the Faculty, and were satisfied with the result. Employers generally were invited, when requiring assistants "intended ultimately to qualify for positions of management and control," to apply to the secretary of the Advisory Board, "when a list will be supplied of available graduates, with brief particulars relative to each." Every other Faculty of Commerce in the kingdom would do well to follow this good example.

It is significant how differently the problem has been treated at the two ancient universities. While Oxford religiously adheres to the theoretical and algebraic methods of last century, Cambridge has made a resolute and successful attempt to get on to modern lines. To the veteran Professor Marshall belongs the chief credit of this advance. At his instance a "Syndicate" or special committee of the University Senate was appointed in 1903 "to inquire into the best means of enlarging the opportunities for the study in Cambridge of Economics and the Associated branches of Political Science." The Syndicate entered into correspondence with the London Chamber of Commerce and a number of representative business men—bankers, railway managers, and heads of the Civil Service. All these authorities expressed themselves decidedly in favour of what the late Sir Clinton Dawkins tersely described as "a training in economics of the same char-

acter as the training given to intending lawyers and physicists.”

In June 1903 the Syndicate submitted to the Senate a scheme for a new Tripos in Economics adapted to two classes of students—first, those who are proposing to devote their lives to the study of economics; and second, those who are looking forward to a career in the higher branches of business or in public life. The curriculum, according to Professor Marshall's own account of it, was arranged for a three years' course—two years to be given to general principles and general history, and the third year to be left open for special studies. In these the student was to be allowed to follow his own particular bent. He might specialise on banking, on trade, or on industrial questions. The plan was duly adopted by the Senate, and has been in operation for four years with satisfactory results.

That is a case of one university chair being, as it were, expanded and modernised by the Professor himself. There was no new endowment, no increased teaching staff, and little if any additional expenditure. Very few of the new experiments in commercial education can say the same. The antipodes of Professor Marshall's one-handed reform is to be found in the London School of Economics. Here we have the latest and most advanced novelties in economics served up by a whole brigade of

experts. From the director to the doorkeeper everybody is a specialist. Even the governors and the supervisory committees are all "authorities" of one kind or another. The London School of Economics seems to be a rendezvous for high financiers, statisticians, philanthropists, Christian socialists, and politicians. The War Office, the Board of Trade, the City, and the three Universities of Oxford, Cambridge, and London meet and shake hands in Clare Market. If under the radiance of such a brilliant constellation commercial science does not flourish, it must be backward indeed.

The London School of Economics is conducted on the model of an up-to-date morning paper. It has a staff of regular lecturers, a reserve of special lecturers, and a host of occasional contributors. Its curriculum embraces history, mathematics, and statistics; library administration, economic theory, political science, accounting and business methods, accident insurance, banking and currency, railway statistics, ethnology, palæography and diplomatics, economic history, transport, geography, commercial law, international law, constitutional law, insurance law, and law at large; historical bibliography, foreign trade, comparative psychology, public administration, constitutional history, sociology, logic, and scientific method.

Apparently any one who can discover or invent a new 'ology has only to go down to



Clare Market and be enrolled as a lecturer on it. The London School of Economics aims at being a political science polytechnic. As such it seems to be finding favour, for the attendance both at its day and evening classes is steadily growing. In the past half dozen years it has trebled itself, having risen from 542 to over 1500. Quite a remarkable proportion of the students, and a still more remarkable proportion of the prize-takers, are women. At all events, one important discovery has been made at Clare Market—namely, that the female mind has a special adaptation as well as a peculiar fascination for commercial science. The lady banker and the railway manageress are already looming on the horizon.

While the old and the new schools of economics were thus popularising higher commercial education, another kind of it had also a temporary vogue. It flourished among the evening and continuation classes, which began to turn out typewriters and stenographers by the thousand. Classes for these and other bread-and-butter subjects were crowded until the supply was overdone. Then the classes began to dwindle. Mr Sydney Webb reluctantly admits this backsliding. In his review of 'London Education' (p. 122) he thus wrote of it:—

On the whole, however, it must be said that the provision in London of commercial education of the "continuation" or supplementary kind fully keeps pace



with the demand for it. Except at such specially successful centres as the Birbeck and the Regent Street Polytechnic the existing class-rooms are often far from full, and some advertised courses fall through from lack of students. The root of the evil is a certain lack of desire on the part of the young men themselves, and the failure of the employers to make their clerks aware that they ought to attend evening classes.

It is significant that two great schemes of popular commercial education—one initiated by the London County Council and the other by the London Chamber of Commerce—should have found so little appreciation where apparently there was the greatest scope for them. The London County Council was not disheartened, however, by its first failure. It turned its attention to higher commercial education, and here, apparently, it has better hopes of ultimate success. Mr Sydney Webb thus describes the experiment which is being made at the University College School with a fully organised and equipped commercial department:—

In 1879 the Technical Education Board of the London County Council began to send a few selected teachers to study at the best French, German, Italian, Swiss, and Belgian institutions for higher commercial education, with a view to their learning the best methods of work. With the experience thus gained a department was established at University College School for the purpose of providing the most carefully planned and the very best commercial education of

first grade secondary type that money could buy. Here the commercial department shares in all the tradition and corporate life of the school. It is recruited not from the dull boys, but from those of exceptional ability. Every care is taken to make the three or four years' course thoroughly educational in character, with full regard for culture and intellectual training rather than mere instruction. But the department prepares for no external examination and follows no traditional curriculum. Greek and Latin find no place. Modern languages are taught in the most approved practical way with quite remarkable success.<sup>1</sup>

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<sup>1</sup> London Education, p. 116.

## CHAPTER VII.—EXPLANATORY DATA.

### UNIVERSITIES, COLLEGES, &C., IN THE UNITED KINGDOM, 1906.

|                             | ENGLAND<br>AND WALES. | SCOTLAND. | IRELAND. |
|-----------------------------|-----------------------|-----------|----------|
| Universities . . . .        | 10                    | 4         | 3        |
| Colleges . . . .            | 70                    | 5         | 10       |
| Medical schools . . .       | 32                    | 4         | 6        |
| Law schools . . . .         | 2                     | ...       | ...      |
| Special engineering schools | 19                    | ...       | ...      |
| Military and Naval . .      | 10                    | ...       | ...      |
| Mercantile Marine . .       | 4                     | ...       | ...      |
| Agriculture . . . .         | 9                     | ...       | ...      |
| Art and Architecture .      | 12                    | 2         | ...      |
| Technical schools—          |                       |           |          |
| London . . . .              | 14                    | ...       | ...      |
| Provinces . . . .           | 9                     | 3         | ...      |
| Polytechnics, London .      | 11                    | ...       | ...      |
| Training colleges . .       | 57                    | ...       | ...      |
| Theological colleges .      | 77                    | ...       | ...      |
| Veterinary colleges . .     | 5                     | 1         | 1        |
|                             | 341                   | 19        | 20       |

## CHAPTER VII.

## HIS OLDEST UNIVERSITIES.

THE English ladder of learning becomes more shaky and uncertain the higher we ascend on it. The lowest rungs, being near the ground, are comparatively solid and secure. The "Three R's" will always be definite facts, however much pedagogic verbiage may be piled up on them. However many new methods of teaching them may be invented, they will always remain much the same in themselves. After all the millions which have been spent on up-to-date elementary schools, their results are not far removed from those of the dames' schools of half a century ago. The "Three R's" defy sophistication even by the most ingenious of code-makers.

But as the educationist ascends to the middle rungs of his ladder of learning clouds gather round him. The demands upon him become varied and conflicting. He is expected to provide ancient learning for one set of people and modern learning for another. At the same time, his ladder is pulled in one direction by scientists

and in another by classicists. Utilitarians take hold of him by one ear and pure culturists by the other. All these different kinds of instruction he is nowadays required to serve *à la carte* to youths of fourteen to eighteen. The curious jumble has to pass for secondary education, and as such it is subsidised by the State as well as by the ratepayers.

It is on the middle rungs of the ladder of learning that we first encounter these repulsive terms—generalise and specialise. What they really mean has never yet been made intelligible to the plain man of the world. It might not enlighten him much to be told that they are lineally descended from the *genera* and *species* of the mediæval schoolmen. Their true meaning being very disputable, it is not surprising that their practical application should be variable and haphazard. The experts are all at sixes and sevens among themselves as to when specialisation should begin and how far it should be carried. Meanwhile every secondary school adopts some makeshift or other of its own.

Educational fog differs from natural fog in growing thicker as you rise and not as you descend. It is thickest of all on the top rungs of the ladder of learning—the university rungs, as they may be called. Of these there are now so many different patterns that bewildered parents stand and look up at them in sheer despair. Thirteenth-century universities, fifteenth-century

universities, nineteenth-century universities, and twentieth-century universities have all got mixed up in admired but awkward confusion. There are universities that swear by Plato, others by Euclid, and others by Adam Smith. Some uphold the Thirty-nine Articles, while others worship radium and helium. From glorified engineering-shops to scholastic sanctuaries they offer the widest possible choice.

And above all, on the top rung of the ladder of learning sits the academic super-man, mythical and indefinable. He is a semi-divine ideal. No one ever meets him in the real world, though he figures frequently in Commemoration Day orations. He is an impossible combination of the highest culture with the purest science; a paragon of classical Greek set in a halo of drawing-room graces. The academic super-man has become too brilliant a being for everyday life. It seems almost sacrilege to ask what his real position is on the ladder of learning. The question is seldom thus bluntly put, for if it were it might be difficult to answer. By tacit consent he is assumed to be the head of our educational hierarchy, just as the two oldest universities are assumed to be the double crown of our educational system. How either of these imaginary *rôles* is filled the keenest educationist hesitates to say.

A co-ordinated scheme of education, reaching from the Kindergarten to the Honour schools

at Oxford and Cambridge, is no doubt a fascinating ideal, but it may be questioned if either the Honour schools or the Kindergarten are in a fit condition to render it practicable. There is no natural connection or affinity between them, or between any of the intermediate grades which are supposed to link them together. Every separate step in our so-called ladder of learning has its own special and peculiar character. It differs from all the others historically and practically. It has a different class of work to do, and a different order of people to serve. What community of thought or sentiment can there be between institutions which count their years by centuries and others which reckon theirs by decades?

On the face of it, there should be obvious incongruity in an alliance between Universities which date from the reign of Henry III. and free schools which are still in their infancy. The only imaginable feature they can have in common is that neither of them appears to have yet discovered its proper *métier*. The seven-centuries-old University and the Board School of 1870 are both still in a tentative stage. Of the two, the ancient University is perhaps the more uncertain as to its future. Its past history gives it little encouragement to be either hopeful or self-confident. Throughout its seven centuries it has never been thoroughly in touch with the nation, and until a comparatively recent

period it never showed much desire to be. Spasmodic efforts are now being made to atone for past neglect, but it may be that they have come too late.

Oxford and Cambridge, regarded as national institutions, appear to have always been in a more or less false position. At no period have they ever exhibited a large and definite policy worthy of their national prestige. Frequently for generations together they have had no policy at all. They were teaching bodies which did as little teaching as possible, centres of scholarship which produced few really great scholars, select schools of science in which eminent scientists have been few and far between. At long intervals they have waked up and tried to discover a new *raison d'être* for themselves, but seldom with permanent success.

The old learning had been monastic in character and environment. It continued to be so long after the dissolution of the monasteries and churches with which it had been originally identified. When, as in the case of St Peter's, Westminster, a religious fraternity was dissolved it received a new lease of life as a secular fraternity. Abbots and friars reappeared as wardens, Fellows, and scholars. Such was the origin of Westminster School. In 1540 Abbot Benson and his twenty-four monks made a voluntary surrender of their property to the king, who "at once erected it into a college of



secular canons." Wherever the monks would come to terms they were secularised instead of being turned out. They agreed to become scholars at large in place of clerics. But scholarship was a secondary object at the outset. The main point was secularisation,—to set up a scholastic priesthood in competition with the ecclesiastical priesthood.

At first the supply of scholars appears to have been scanty, and the level of scholarship low. The scholars themselves were frequently rude and unruly, but in these respects they no doubt fairly represented the manners of their age. It was a long while before either Oxford or Cambridge set itself up as a model of culture. That was almost the latest of the historical phases they have passed through. Little was heard of it in the sixteenth century or even in the seventeenth. Would it be wrong to suggest that it was a mere hothouse growth of the drawing-room *régime* which shed a passing lustre on Oxford in the second half of the nineteenth century?

If we may judge from contemporary records, the original Eton boy, like the Oxford scholar of the same period, was something of a monastic hooligan. The oldest glimpses we have of college life in England show that education was a subordinate question to discipline. The original charters of colleges have much less to say about either learning or culture than about maintain-

ing order. Fighting, head-breaking, and rioting generally are the most distinctive incidents in early academic annals. The Reformation, instead of checking academic rowdyism, aggravated it by adding fresh fuel to discords which were already burning fiercely. The Town and Gown riots of a later day were only continuations of an older and more desperate sort—the Church and Gown riots—in which priests and scholars fought over the spoils of the monasteries.

Though the colleges ultimately became staunch allies and champions of the Church, their original relations to it were rather the reverse. It regarded them as rivals and interlopers, for the bequests by which they were established might otherwise have fallen to some rich monastery or abbey. The pious founders who created Oxford and Cambridge seem to have been on the lookout for a non-ecclesiastical channel into which to divert their benevolence. And the diversion was very naturally resented by the ecclesiastics of the day. Conflicts of a not merely academic sort sometimes arose in consequence. "Clerks" and collegians came into such violent collision at times that the civil arm had to be invoked to pacify them.

A statute passed in the fifteenth year of Henry III. provided that "when the Chancellor and Masters of the University of Cambridge shall have rebellious clerks who will not be chastened by them, they shall signify it to the Bishop of

Ely, who shall signify it to the Sheriff, who is to go to Cambridge, and according to the direction of the Chancellor and Masters shall release, retain in prison, or expel the delinquents from Cambridge." Thirty years later, in the same reign, there is an entry relating to the "appointment of Justices to hear and determine the complaints of some scholars of Cambridge of injuries done to them by clerks and laymen who broke into their houses *vi et armis* and wounded them."

Evidently there was about as much resemblance between a Cambridge college of Henry III.'s time and a Cambridge college of 1907 as there is between a Rowton lodging-house and the Cecil Hotel. The pious founder was seldom very specific with his bequests. He described them in a general way as being for the maintenance of so many Fellows and scholars. There was no prescribed course either of teaching or of learning. The Fellows and scholars were allowed to work that out for themselves, and they have been working at it all these centuries. Every new grant or bequest as it came along was assigned to a particular use—a new scholarship, or a new lectureship, or an increase in some existing endowment.

A characteristic example of how godly learning was promoted at Cambridge in the early part of the seventeenth century is furnished by the allocation made by Sydney Sussex College of the

income derived from the Craddaling Park estate acquired in 1634. In the long list of items the following occur :—

To each of Mr Peter Blundell's Fellows £3, 14s. 0d. per annum, with this special limitation, that it be not paid to any of them before he be compleat Master of Arts. To each of the 20 Scholars of the First Foundation, 20s. per annum. For a Mathematick Lecture in the College, £6, 13s. 4d. per annum. For a lecture on Ecclesiastical History, £5 per annum.

The next item is less academic but has more human nature in it—"For an addition to the expense of the Foundresses' Feast, 30s. per annum."

The colleges grew up in a hand-to-mouth way, enlarging their foundations and their programmes every time a new windfall arrived. The above "Mathematick Lecture" is specially interesting as a first step beyond the original classics. It is also a landmark showing where the two Universities began to diverge, Cambridge striking out into modern science while Oxford remained in the old beaten track. But it would be a great mistake to suppose that the Oxford and Cambridge ideas of learning had been severely classical from the outset. They only became so by a contraction of their original scope, for which it is to be feared that growing luxury and laziness were partly to blame. In the oldest charters and statutes other studies than Latin and Greek are frequently alluded to. The three principal ones

were Hebrew, Greek, and Theology. Logic is mentioned occasionally, and sciences are often coupled with languages in the description of college studies.

For instance, in the original statutes of St John's College, Cambridge, it is said, "Visum est nobis ut meliores scientiarum et linguarum progressionones." Trinity College professed three special subjects—Theology, Hebrew, and Greek. One of the old statutes, "De Tribus publicis Lectoribus," said, "quorum unus Theologiam, alter linguam Hebraicam, tertius Graecam docet." Another college added Medicine to its curriculum, and logic generally ranked as one of the sciences. In the original patent of Gonville and Caius College, which goes back to the middle of the fourteenth century, "logic and other sciences" are expressly mentioned in place of Latin and Greek.<sup>1</sup>

Strictly speaking, Latin was not one of the regular studies of the ancient colleges. It was the language of their daily life—the mother-tongue of the youngest scholar. They were forbidden to use any other within the college walls. Queen's College had a statute requiring Fellows

<sup>1</sup> 1347-48. "Edmund Gonville, Rector of Terrington, obtained his patents under the Great Seal of England dated at Westminster, January 28, 22 Edward III., by which he had leave to convey his three messuages with the orchard and appurtenances thereon unto a perpetual college of twenty scholars, *students in logic and other sciences*."—Documents relating to the University and Colleges of Cambridge.

and scholars to converse in Latin during dinner and supper. This was as natural a rule in the circumstances as requiring them to attend chapel daily. Previous to the Reformation, when the oldest of our universities and public schools were founded, a "liberal education" meant training in Latin, Greek, and Divinity. A century later it was widened to include mathematics and the rudiments of physics. Two centuries more were needed to make room in it for applied science. All these enlargements of the original conception were stoutly resisted from the inside, and only the irresistible growth of human thought compelled the defenders of the old learning to make a little room for the new.

We had a glimpse of Town and Gown riots as they were conducted in the pre-Reformation era, and two centuries later we find them not very greatly improved. Family letters of the seventeenth and eighteenth centuries which have come to light recently give very rough pictures of the university life of those days. It was Spartan enough as regards cost, but shockingly full of horseplay. Christopher Hull, who afterwards became headmaster of Sedberg School, entered St John's College, Cambridge, in 1761. In one of his early letters home he thus graphically describes how the playful undergraduates of the period disported themselves at nights:—

I have been put to some small expense by practises not very agreeable to ye character of an honest and

reasonable man. I mean by riots, wch are frequently made in or about my room, for wch reason I shall be obliged to change it. The first time they rioted I was terribly frightened, for I co'd not persuade myself it was any of the College but yt it was somebody come to rob, and accordingly hid my money in the bed straw. Another time they had broke my door to pieces before I co'd get hold of my trusty poker wch I had got lay'd anew for a weapon of defence. After I had repulsed them they rallyd again with great fury, and I took them upon the stairs, wch was the only time they were catch'd. . . . Hutton has suffered a great deal by 'em, for they throw everything down as soon as ever they get in, and make as big a noise as if all Bedlam was let loose.

Ragging was not Master Chris Hull's only subject of complaint at Cambridge. He proceeds to inform his family that—

We are likewise often imposed on by people that do anything for us, but if Mr Abbot<sup>1</sup> know it, and he's very careful about our bills, he immediately turns them off if they have any employment in Coll. My Laundress he turned away for charging me 2 shillings too much, and my bedmaker I suspect of stealing my coals, and ye first time I catch him I'll send him a-packing.

Thanks to the combined vigilance of Master Hull and his tutor expenses were kept down to what undergraduates of to-day may well regard as an enviably low level. Mr Abbot's bill for the Michaelmas term as given in detail amounts to only £13, 13s. 3½d., and appended to it there is a

<sup>1</sup> His tutor.



footnote by Master Hull, assuring his father that "I can live more genteely for 40 than many in our Coll. for 70 pounds a-year, and keep better company."

At the outset Oxford and Cambridge were, of course, theological. That continued to be their main characteristic throughout the sixteenth century. Under the Stuarts, and especially during the Civil War, they had to be political as well. In the eighteenth century the little life that was left in them was kept alive by philosophical discussion. At the beginning of the nineteenth century they struck out a new line, and became a finishing school for gentlemen. This was perhaps their most brilliant period. While they were turning out a continuous stream of statesmen, lawyers, and divines, their prestige was at its highest.

Apart from that exceptional period, which covered the first half of the nineteenth century, the two ancient Universities were seldom important factors in English history. It is significant how little reference is made to them by standard historians. Hume, though his narrative comes down to the end of James II.'s reign, hardly ever mentions either an English university or a public school. His principal allusion to Oxford occurs in a description of the state of learning and arts under James I., and it is not highly complimentary.



Science, as well as polite literature, must [he says] be considered as being yet in its infancy. Scholastic learning and polemical divinity retarded the growth of all true knowledge. Sir Henry Saville, in the preamble of the deed by which he annexed a salary to the mathematical and astronomical professors in Oxford, says that geometry was almost totally abandoned and unknown in England. The best learning of that age was the study of the ancients.

Smollett, in his continuation of Hume, finds equally little to note in the proceedings of the two Universities. He mentions only one incident in Oxford history, the installation of the Earl of Westmoreland as chancellor. Even this he treats rather as a pageant than as an academic event. He speaks of the new chancellor having

made a public entrance into that celebrated seat of learning with great magnificence and been installed amidst the *Encænia*, which were celebrated with such classical elegance and pomp as might have rivalled the chief Roman festival of the Augustan age. The Chancellor-Elect was attended by a splendid train of nobility and persons of distinction. The City of Oxford was filled with a vast concourse of strangers. The processions were contrived with taste and conducted with decorum. The installation was performed with the most striking solemnity.

When we turn from the spectacular side of Oxford as exhibited by Smollett to the academic side as it appeared to Adam Smith, a sudden change from light to darkness takes place.

Adam Smith, having been himself a Scottish professor, was not of course an unbiassed judge of English Universities, but censure so sweeping and forcible as his could not have been ventured upon without good cause. In his chapter on "Institutions for the Education of Youth" he describes the various forms of government to be found among them, and points out their respective merits and defects. In self-governing Universities, he says, "the teachers are likely to make common cause, and to be very indulgent to one another, and every man to consent that his neighbour may neglect his duty, provided he himself is allowed to neglect his own." Then by way of illustration he mentions incidentally that "in the University of Oxford the greater part of the public professors have for these many years given up altogether even the pretence of teaching."

In another part of the same chapter Smith enlarges on the inefficiency of the Universities, and compares them unfavourably with the public schools.

In England the public schools are much less corrupted than the Universities. In the schools the youth are taught, or at least may be taught, Greek and Latin: that is everything which the masters pretend to teach, or which it is expected they should teach. In the Universities the youth neither are taught nor can they always find proper means of being taught the sciences which it is the business of these incorporated bodies to teach.

It may be objected that Hume and Smollett and Adam Smith were outsiders, and therefore not competent judges of English University methods. If so, weightier evidence to the same effect can be drawn from within the academic circle itself. John Locke, John Evelyn, and Sir Isaac Newton were all distinguished sons of Oxford or Cambridge, but at the same time they were candid critics of their *alma mater*. In his Diary Evelyn more than once indulges in side-thrusts at the academic methods of his day—the end of the seventeenth century. Not long ago Sir William Huggins, at a meeting of the Royal Society, reminded his fellow-members that in 1675 Evelyn had addressed to the Society a strong complaint that “at most schools there was a casting away six or seven years in the learning of words only, and that very imperfectly.”

Four years earlier a much more important event had happened in the same Society. The minutes of the 21st December 1671 record that the Bishop of Sarum had proposed the election of “Mr Isaac Newton, the then Professor of Mathematics at Cambridge,” and on the 11th January following it is further recorded that he has been duly elected. His Cambridge lectures cannot have been very lucrative, for in the early part of 1673 he found it necessary to intimate to the committee of the Royal Society his desire to be excused the weekly payments expected from

members. The committee agreed that they be "dispensed with as several others were." The minute does not, however, state whether the others were university men or not. It is well known that Newton's discoveries were communicated to the Royal Society, and that the manuscript of his 'Principia' is now among its most cherished treasures. Cambridge University appears to have had little claim on either his sympathy or his gratitude.

John Locke was a Westminster scholar and a Fellow of Christ Church. Consequently he had personal experience of the academic teaching of the time, and was well able to judge of its capabilities. But in his 'Thoughts concerning Reading and Study for a Gentleman' there is not the slightest suggestion of public school or university curricula. Where we might have expected from him a catalogue of Greek and Latin exercises he says quite simply—

I think an English gentleman should be well versed in the history of England, taking her rise as far back as there are any records of it, joining with it the laws which were made in the several ages as he goes along in her history—that he may observe from thence the several turns of State and how they have been produced.

He adds that to the proper reading of history chronology and geography are absolutely necessary. Dictionaries of all kinds, Latin as well as English, he considered indispensable to a

gentleman's library. But of Latin grammar and verse-making there is never a word from one end of the tract to the other.

In Locke's time the grammarians were still specialists, and apparently no gentleman ever thought of going to Oxford or Cambridge for "a sound liberal education." That fashion did not come in till a century later, and it did not flourish until the invention of the steam-engine set all mankind a-travelling. To James Watt and George Stephenson, more than to any newly-discovered attraction of their classical curricula, Oxford and Cambridge owed the surprising expansion they enjoyed in the second quarter of the nineteenth century. Paradoxical as it may sound, there might have been no Puseyite movement at Oxford had the world continued to travel by stage-coach at the sober speed of ten miles an hour.

Our ancient Universities have also something to thank Napoleon for. If he had not closed the Continent against the young English noblemen who had been accustomed to go abroad for their education, and to complete it by making the grand tour, Oxford and Cambridge might have remained in the shade for years longer than they did. Adam Smith, writing about the middle of the eighteenth century, remarked that "it becomes more and more the custom to send young people to travel in foreign countries immediately upon their leaving school, and without

sending them to any University." Wealthy parents who had to choose for their sons between "classical" education of the then Oxford type and foreign travel in charge of a bear-leader, seem to have generally considered the bear-leader the lesser evil.

In order to account for such a choice we are driven to infer that the status of the Universities must then have been decidedly low both socially and educationally. About 1830-35 an opportunity was afforded to them to make a new departure. Had they taken full advantage of the influx of brilliant students, which began with Gladstone and his contemporaries, they might at last have got into genuine touch with the nation as a whole. Had the revival which rushed in on them from outside been heartily and spontaneously welcomed, a permanent solution of the academic problem might soon have been realised. If the "movements" which frittered themselves away in Puseyism and Ruskinism had been conducted on modern instead of monastic lines, and in a national instead of a classical spirit, the future of Oxford and Cambridge might long ere now have been placed beyond doubt or question.

At the beginning of the nineteenth century Greek and Latin were scholastically as well as practically dead languages. It might have been wise to leave them alone, and to build up a new academic system on a living tongue, richer and wider-reaching than any other that has ever

existed—namely, our own. The cardinal sin of our ancient Universities—their persistent disloyalty to their mother-tongue—might thus have been ended and in some measure atoned for. Another three-quarters of a century have been wasted in futile efforts to keep the living language in subjection to the dead ones, but the ultimate issue is only the more certain. The academic super-man has got to descend from his classical pedestal and speak to the English people in their own tongue, if he is ever to be a true and genuine educator to them.

No reasonable layman asks that Greek and Latin should be wholly removed from the University curriculum, or even that they should be reduced to a very subordinate position in it. All that is claimed is a discontinuance of the unfair and absurd discrimination exercised in their favour wherever they come into competition with the mother-tongue. Let the classicists still have their Greek verbs and their Latin verses, but put a fair relative value on them. Do not let them count in class-work and in scholarship competitions for a great deal more than any English subject.

What is needed is not to excommunicate the Philo-Greeks or to hurt their feelings in any way, but simply to take from them the unreasonable power they have for centuries possessed of putting a fancy value on their own scholastic wares. Not only have they the power to fix their own prices, but they are allowed to beat down the prices of



all other wares which might interfere with their market. The fundamental principle of every English University, ancient or modern, should be that the national language and literature are to hold the highest place in it.

The Græco-Latinists have already had to make some material concessions, and in due time the rest will have to follow. The largest concession of all has, strange to say, been made to a class of students who can hardly be regarded as the most deserving. Both at Oxford and Cambridge "natives of Asia not of European parentage," which too often means nowadays young Bengalees in training for agitators and sedition-mongers, may, in place of the Greek and Latin books required of English students, substitute papers in English. The text of this remarkable regulation, as applied to Part I. of the previous examination at Cambridge, reads thus:—

Natives of Asia not of European parentage may substitute for paper (1) a paper on the same gospel in the authorised English version, or on a modern English prose work of a historical character with questions on the subject matter; and instead of paper (3) a paper on a play of Shakespeare or some other English play or classic of similar length, with grammatical or other questions arising therefrom; and instead of the half-paper on Greek grammar in paper (5), a paper containing one or more subjects for a short English essay.

The papers specially allowed to "natives of Asia" would make an ideal examination for



English students, but in the University Babel no one can be permitted to use his own tongue. The youth who knows and loves Shakespeare has to talk Plato and Ovid, while the young Bengalee, whose mind is steeped in the Vedas, has to struggle with "Hamlet" or "Paradise Lost." What a wide field for Gilbertian satire invites exploration in the Oxford and Cambridge schools! They calmly proceed on the assumption that for academic purposes a general exchange of languages is indispensable.

If the Universities had had a free hand at Oxford and Cambridge these anomalies might have been put an end to long ago. But it is the Colleges which rule the roast, and their position is so peculiar that they cannot be expected to move in a hurry. They are so strangely and wonderfully constituted that comparatively slight changes might shake them to pieces. It must be remembered that they were not originally intended for schools or teaching bodies. That function has been imposed on them by force of circumstances which they did not create, and over which they had no control.

The Colleges of Oxford and Cambridge are more in the nature of modern clubs than of modern schools. As clubs they have rendered far greater service to the country than as schools. It is questionable if they could be converted into efficient schools without great risk of destroying

their value as academic clubs. The article which they originally undertook to supply was resident scholarship, and that is an article for which there is still some need. The Colleges may be worth preserving simply for the sake of producing it. But they cannot do two incongruous things at the same time—namely, promote resident scholarship and do outside teaching.

Either the resident scholar or the undergraduate will have to go. Most probably it will be the former. He has had six or seven centuries of a good time, and cannot claim a great deal of pity should he have to make room for the new race of educational hustlers. He might, of course, have made better use of his time and opportunities, but it is now too late to think of that. The ancient university, as such, is doomed. And yet there is much in it which will be greatly missed in its better equipped successors.

## CHAPTER VIII.

## HIS YOUNGEST UNIVERSITIES.

ON the 1st January 1908, South Kensington entered into possession of a genuine University of Science, the first of its kind that has ever been achieved in this country. Its official title is the Imperial College of Science and Technology, but it will ultimately be, in fact, a group of colleges capable of turning out chemists, mining engineers, mechanical engineers, electrical engineers, mineralogists, and other technical experts.

This University of Science has taken more than half a century to evolve from a long and varied succession of South Kensington experiments. And we may respectfully doubt if it ever could have been evolved if South Kensington had not at last graciously accepted the co-operation of City men, who knew better than the "solar scientists" could do what was really needed. The movement which has been crowned with this brilliant success began half a dozen years

ago in a scheme for the more practical training of mining engineers.

The Institution of Mining and Metallurgy set the ball rolling, and guided its course as it gathered up Cabinet Ministers, County Councillors, University dons, and City millionaires. With one or two exceptions, it encountered no resistance worth speaking of. The scheme itself covered the ground so completely and precisely that it met with general acceptance. One of the first authorities to whom it was submitted, Sir Julius Wernher, approved of it on the spot, and it was his warm support that gave it a real start. There is, however, a pretty long story to tell before we come to that critical point in its history.

The origin of scientific education in this country is generally attributed to the great Exhibition of 1851, and no doubt its systematic development began then. The Prince Consort and Lord Playfair were its pioneers, but the seed had been planted even before their time. Not to mention the Royal Society, which goes back to the days of the Commonwealth, or the Smeatonian Society of Civil Engineers, which traces its descent from a kindred body formed at the beginning of George III.'s reign, there was a School of Geology set up in 1837 in connection with the Geological Survey. Its original quarters were in Craig's Court, but in 1851 it was absorbed into the School of Mines in Jermyn Street.

The original programme of the London University and its twin colleges—the University and King’s—was well leavened with science. Each of the colleges started an engineering department—the University in 1826 and King’s in 1838. Engineering has continued to be a speciality with them ever since, at King’s particularly so. Our first school of chemistry was founded in 1845, and carried on its operations in Oxford Street. It prospered and developed into the Royal College of Chemistry, which in 1851 was taken over by the Government, and became part of the new School of Mines and of Science, the first fruits of the Exhibition scheme. In 1852 a School of Practical Art was established, and next year a science division was added.

These schools appear to have been scattered over London—one in Craig’s Court, one in Oxford Street, and another in Jermyn Street. The ambition of the Exhibition Commissioners was to gather them all into one fold at South Kensington, but that took much longer than the pioneers of scientific education anticipated. It may sound a little funny now, but the Board of Trade was the Department first selected for science master. By that Board the original Science and Art Department was organised in 1853, a parentage clearly betokening the practical intentions of the Prince Consort and his associates. Their ultimate object was the scientific training of artisans, and they proposed to carry it out by sending science

teachers all over the country. The Board of Trade scheme of 1853 proposed in rather florid language "the creation in the Metropolis of a school of the highest class, capable of affording the best instruction and the most perfect training which can alone be hoped for from an institution which has the command of the most eminent and distinguished talent, the advantages of which will be experienced by minor institutions throughout the kingdom, not only as furnishing a central source of information, but as a means of providing competent and well-qualified teachers for local institutions."

In practice this original South Kensington programme had two opposite developments, one downward and the other upward. The upward development resulted in a *régime* of high science, which disdained all the vulgarities of daily life, except the cash endowments. The downward one flooded the country with a well-paid army of science teachers, directors, inspectors, and experts generally. The only practical part of the scheme was the School of Mines in Jermyn Street. It not only did very useful teaching, but it produced a galaxy of distinguished scientists which gave South Kensington good cause to be envious. Beginning with Murchison, Percy, and De la Beche, it was continued by Huxley, Tyndall, Ramsay, Hofman, Playfair, and Frankland. But Jermyn Street being useful rather than fashionable, it was, of course, very badly paid. As for

equipment, it had next to none. Dr Percy, the Professor of Metallurgy, was on one occasion so greatly worried over an application for a new furnace that he finally built it at his own expense.

The standard salary for a professor at Jermyn Street was about £300 a-year, and that miserable pittance continued till a very recent period to be paid to men of the first rank in their professions. There were clerks at South Kensington with better salaries, but then they were "friends of the family." Even after the removal of the School of Mines to South Kensington it continued to be treated as a Cinderella. "High science" was in the ascendant, and coal or iron mining was quite beneath the dignity of high priests of the solar spectrum. In order to elevate the old Jermyn Street curriculum, which had consisted of three plain courses—mining, metallurgy, and geology—to the South Kensington level, several 'ologies were added. Whereupon trouble arose.

Young fellows who had to cram biology and solar physics when they had barely time enough for the most elementary mining course, naturally grew dissatisfied. When they graduated and went abroad in search of situations, they encountered German and American engineers who had been properly trained for their work. The reputation of the School of Mines suffered accordingly. A revolt was brewing among the students when relief arrived from an unexpected quarter. An Institution of Mining and Metallurgy had been

formed in the City in 1892, and it soon became a power both in mining science and mining finance. Mining engineers rallied round it, and graduates of the Royal School of Mines formed a large proportion of its membership. They also constituted about a third of the Council.

Obviously the Institution had a deep interest in the fortunes of our principal mining school, and also the best possible right to take them under its care. Professional education had been one of the original articles in its programme, and at an early date it began to establish scholarships for post-graduate studies. These were of a most practical kind — the holders of them being required to attach themselves to mines on the Rand or elsewhere, where they could go through a course of technical as well as commercial training. In the administration of these scholarships and other ways it came home to the Council of the Institute how greatly the students were being handicapped by a curriculum in which useless 'ologies crowded out the useful ones. With great labour and pains they framed a model curriculum from the professional point of view. One of the distinguished engineers who took part in elaborating it was Mr Hennen Jennings, who wrote an elaborate series of notes to explain the scheme.

As was to be expected, the "solar scientists" strongly resisted any invasion of their domain, and a long internal fight had to be made in



the Department before they gave in. In the end a new secretary, Mr Ogilvie, was appointed, and from that time everything went smoothly at Whitehall. Sir William Anson's successors—Mr Birrell and Mr M'Kenna—both followed up with energy and goodwill the lead he had given them.

The next step was to enlist the other educational authorities in the movement, beginning, of course, with the London County Council. Lord Rosebery, as an ex-chairman of the Council and a friend of Sir Julius Wernher, was considered the most suitable intercessor in that quarter. He readily undertook the office, and the result was his famous Charlottenburg letter. As a matter of fact, the scheme had little or no resemblance to Charlottenburg; but catchwords are handy, even when they do not bear strict criticism. The Council's reply to the Charlottenburg letter was a promise of £20,000 a-year towards the maintenance of the proposed Science University. Certain very reasonable conditions as to scholarships were attached to the promise, which the Institute readily agreed to.

There is no need to go through all the details of the subsequent negotiations with the City Companies, University Councils, Public School trustees, and other educational bodies. In practically every case hearty co-operation was promised. Meanwhile a Departmental Committee had been appointed (April 1904) to report on the subject in

all its bearings. That Committee is generally known by the name of its chairman, Mr Haldane, who was then as keen a higher educationist as he is now an army reformer. After nearly two years' inquiry, in which the whole of our existing machinery for science teaching came under review, a final report was made in January 1906.

So far as concerned the scheme itself the report was unanimous, but a difference of opinion arose as to how it should be carried out. The "solar scientists" wished to have the whole combination tacked on to the University of London, but the City scientists were on their guard and contended for its independence. In a supplementary memorandum Sir William White and Mr Walter MacDermott (who represented on the Committee the Institution of Mining and Metallurgy), deprecated University alliances. In their opinion, it was much more important for the new institution to be in close touch with the various industries of the country and the engineering societies than with academic bodies.

To this Lord Reay and Sir Arthur Rucker replied in a counter-memorandum that "it was desirable in the interests of higher education and of the new institution that steps should be taken as soon as possible to incorporate it in the University of London." This vital point had to be fought out with the Board of Education, first with Mr Birrell and afterwards with Mr M'Kenna.

The latter has given a provisional decision which guarantees the independence of the governing body for five years. By the end of that time it is to be hoped that the Imperial College of Science and Technology will be too big a mouthful for any other university to try to swallow.

Our new University of Science will be a virtual realisation of the suggestions laid before the Departmental Committee in June 1904 by the Council of the Institute of Mining and Metallurgy. These were summed up in clause 7 thus :—

The Council consider that the time is opportune for effecting a combination of various colleges of pure and applied science, such as the Royal School of Mines, the Royal College of Science, including the new physical and chemical laboratories at South Kensington and the City and Guilds Institute.

The various schools and colleges named, instead of working for their own hands as they have done hitherto, will in future work together. A mining student will take his chemistry and physics at the new laboratories facing the Imperial Institute. These, by the way, are said by competent authorities to be the best planned and best equipped laboratories of their kind in existence, so that at last we have got one blue riband in the scientific world. For his engineering the student will go to the City and Guilds Central Technical College, which, I hope, will soon shed its cumbrous and misleading title and call itself what it really is—a first-class College of Mechanical and Electrical

Engineering. His mining, metallurgy, and other professional training he will get in the new buildings which are to be erected with Sir Julius Wernher's £100,000, and other handsome donations. For these new buildings the Exhibition Commissioners have offered a choice of sites among their remaining unoccupied lands.

Electrical and mechanical engineers will take their chemistry and physics at the new laboratories, and finish off in the City and Guilds Central Technical College. Science teachers will get most of their training in the new laboratories, which were, in fact, originally intended for them. By-and-by it may be possible to bring back to South Kensington the School of Naval Architecture, which was removed to Greenwich years ago. Why or wherefore it was removed has never been explained; but possibly, like Peter the Great's boat-shed, it was too plebeian. No one will welcome the return of the old school more warmly than its most distinguished pupil, Sir William White. Doubtless, in course of time, other technical sciences will find a home in the new University at South Kensington; but even as it is we may be proud of it, and thankful to all who have assisted in its organisation.

The past decade has, indeed, been prolific of universities. Besides creating the brand-new University of Science above described, at South Kensington, it has given us a completely re-organised University of London. It has seen

the break-up of the old Victoria University and the uprising of five new universities from its ashes—namely, Manchester, Liverpool, Birmingham, Leeds, and Sheffield. In the case of Manchester and Liverpool the change has been merely formal, but in the other three cases it has been organic. For Leeds and Sheffield, the youngest of our provincial universities, it has been a new birth. A brief description of them may therefore have some historical value.

Fully thirty years ago Lord Frederick Cavendish, who was done to death in the Phoenix Park, started the movement which has given Leeds a full-fledged University. It was at his suggestion that a public meeting was held “to consider the desirability of establishing a College of Science in Yorkshire.” He presided over it and became chairman of the Provisional Committee to which the carrying out of the scheme was entrusted. The Committee worked hard for the next four years gathering information as to the various experiments that were being made abroad in scientific education. They also raised about one-third of the £60,000 originally asked for, and they drew up a scheme, which in 1874 assumed definite form as the Yorkshire College of Science. It was limited at first to three Chairs—Geology and Mining, Chemistry, Mathematics and Physics. In all three cases it was singularly fortunate in its first professors. They were Professor Green, now holding the Geological Chair at Oxford; Dr

Thorp, afterwards Director of the laboratory attached to the Inland Revenue Service; and Professor Rucker, now at the head of the re-organised University of London.

The new College prospered and grew rapidly. Before it had been much more than a year in operation two additional Chairs were founded for Biology and Engineering (1876). A couple of years later its programme was enlarged by starting an Arts Faculty with a Chair of Classics and another of Literature and History. In 1884 a Medical Faculty was formed by taking in the Leeds School of Medicine, an institution over half a century old. It had been founded in 1831, three years after the School of Medicine at Sheffield. In 1887 the Yorkshire College, as it was now called, affiliated itself to the Victoria University, which hitherto had included only the Liverpool College and Owens College, Manchester. In 1904 provincial universities came into fashion, and Leeds obtained a full-blown academic charter.

That is virtually the whole history of the College proper. The technical department grew up outside of the academic circle, and has a very interesting history of its own. While the Leeds people were struggling with South Kensington science, which then began nowhere and ended nowhere, an outside body supplied the industrial science that was in reality most needed. The first technical Chair, that of textile industries, was

founded by the Clothworkers' Company of London, and is maintained by it to this day. This and its allied department of dyeing are undoubtedly the most distinctive features of the Leeds University as it now exists. The Clothworkers' Court, which forms one end of the fine pile of buildings in College Road, is one of the best examples of technical education in this country. It is one of the few experiments that have fully realised the hopes and intentions of their founders. It is a success in every way—in drawing pupils, in teaching them thoroughly, and in raising both the scientific and the artistic standards of the industry it serves.

That the Leeds people should owe this most practical and distinctive part of their University to a City of London Company is certainly a paradox. It shows how confused were the popular ideas of technical science twenty years ago. While Leeds was spending its own money on the teaching of scientific theory, the Clothworkers' Company set up object-lessons in spinning, weaving, and dyeing. Subsequently, when the two methods could be seen at work, Leeds modified its preference for theory and paid more attention to the technical side of the subject. In 1891, when the Technical Instruction Act gave it a hold on the rates, it began to make liberal grants to the Technical Department of the College. The County Councils of the three Ridings were equally generous and



enlightened. Important additions were in consequence made to the Department—a Chair of Agriculture, a Lectureship in Leather Industries (since raised to a Professorship), a research lecturer in dyeing, and a day training college for elementary teachers.

Higher education in Sheffield underwent much the same kind of evolution as in other Midland cities. From evening science classes it advanced to Firth College and a medical school. To these there was added in due time an excellent technical school. In the course of nature all these useful institutions drew together and were ultimately combined in a University scheme. But it was not till the autumn of 1905 that the University found itself properly housed and in full working order. To this building and endowment fund of £170,000 not only Sheffield but the whole of the West Riding subscribed liberally. For that sum it was estimated that a group of buildings adapted in every way to the needs of a modern University might be provided. The plan decided on contemplates four blocks forming a quadrangle 154 feet by 110 feet. A site  $2\frac{1}{2}$  acres in extent was secured at Western Bank, on the outskirts of the city and adjoining a large public park. The north, south, and west blocks were first completed, and formally opened by his Majesty King Edward. They contain the great hall and administration offices in front, arts and science lecture-rooms, laboratories, &c., on



the west side, and at the back the medical department. When funds permit the eastern block will be added.

After full consideration it was decided to leave the Technical School in its existing premises at St George's Square. Though only five minutes' walk from the new University buildings, they are that much nearer the manufacturing centre of the city. Moreover, it would have been a serious waste of money and material to abandon a new and admirably-equipped establishment as this was. So the Technical School was left at St George's Square, but on a new and higher footing than it had originally possessed. It became one of the four departments of the University, the other three being Arts, Pure Science, and Medicine. Its academic title is the Department of Applied Science, and a simple line of distinction has been drawn between it and the sister Faculty of Pure Science. The latter deals only with scientific principles, leaving their practical illustration to the Technical Faculty.

So far this division of labour has worked well. All students take their art classes, as well as their elementary chemistry, physics, &c., at the University. They go down to St George's Square for their engineering, metallurgy, mining, and other technical subjects. Metallurgy is, of course, Sheffield's special *rôle*, and the appliances for teaching it are unique. They may be overshadowed at Pittsburg in sheer size, but certainly

not in quality. Besides the usual lecture-room and laboratory there is close by a real foundry. It was operated as a private foundry till recently, when Sir Frederick Mappin bought it for the use of the Technical College. Then the toy methods of South Kensington gave place to real steel-making. The former "consisted mainly of making small buttons of metal in miniature crucibles in laboratory furnaces." So at least we are told in the official souvenir of the opening of the engineering and metallurgical laboratories, which adds that

With the advent of Professor Arnold to the Chair of Metallurgy all this was revolutionised. The new programme included the erection of a small steelworks plant, with a 25-cwt. open-hearth steel furnace, complete with gas producers, hydraulic cranes, forced draught appliances, falling weight test, crucible steel house, melting holes, pot house, pot-making tools, a flame and annealing furnace for the production of malleable iron castings and the annealing of steel castings, an iron cupola, drying stove, and all the appliances necessary for the equipping of an experimental steelworks laboratory on a practical working scale. Provision was also made for the rapid and accurate chemical examination of iron and steel, fuel and refractory materials, and for the measuring of high temperatures.

One of the special aims of the new University of Science will be to get into close touch with all the other schools of Applied Science both in London and the provinces. It is hoped that a conjoint curriculum may be arranged under which

students may take their general subjects, such as physics and chemistry, at a provincial university and come up to South Kensington for their special studies. When Public Schools as a whole begin to take their modern sides seriously, they may also be able to send up boys to South Kensington fit for second or even third year classes. One or two of them, like Tonbridge School, are already almost up to that level.

Prolific and eventful as the past decade has been among our youngest universities, that is only a foretaste of greater developments to come. Lord Beaconsfield's aphorism that "the future is for the young" is at present specially true of academic life.

## CHAPTER IX.

## HIS TECHNICAL SCIENCE CRAZE.

JUST when our technical scientists were beginning to flatter themselves that they would soon catch up Germany, a very annoying piece of news comes from that quarter. An alarm has been raised at the German universities and high schools that scientific education is being overdone, and that the supply of technical experts already exceeds the demand. The 'Statistical Annual' of the German universities recently issued discloses the startling truth that the number of students, both on the classical and scientific sides, is increasing at an alarming rate.

In the past thirty years the number of undergraduates at the older universities has nearly trebled. It is now 45,000, as compared with 30,000 in 1897, and 17,500 in 1877. But that is a trifle beside the rapid growth of the Technical Universities. Their students have more than trebled in the past twelve years, having risen from 4200 in 1891 to 13,269 in 1903. The only academic faculty which is not growing too fast is the

theological, and it is falling off sadly. But what concerns us chiefly here is the impending glut of scientists. So keen is the competition among them for positions, that their salaries in 1906 are officially stated to have averaged only £103 per annum!

Technical teaching, which might and should have been the basis of our English system, came in only at the eleventh hour as a second-hand exotic. It was the latest and most peculiar of our many educational crazes, one more illustration of Spencer's forty-year-old sarcasm, that "men dress their children's minds as they do their bodies, in the prevailing fashion." Another satirical philosopher of the same period said of us that "we changed our School Boards every three years, revised our Education Code once a-year, and had a new education fad every two or three months."

Needless to say, the latest style of technical education was "made in Germany." Both Whitehall and South Kensington have had longing eyes fixed on it for years. Ever since Mr Sadler wrote a special report on its "Ober Real Schule," Charlottenburg has been a sort of Mecca with our technical enthusiasts. But it was not by any means the first German model they fell in love with. A good many special commissioners had preceded Mr Sadler, and brought back equally glowing pictures of "Ober Real Schulen," which they said ought to be reproduced here if our technical

industries were not to be left hopelessly behind. Forty years ago South Kensington experts were already making pleasant trips to various parts of the Continent on kindred errands. The archives of the Education Department groan under the weight of these unread and now unreadable reports. But at last a wealthy convert was made. The City Guilds provided funds for a Technical College at South Kensington, which embodied the latest ideas of the Department, and was intended to be an object-lesson to less cultivated regions. Though by no means a brilliant success at first, it had the desired effect elsewhere, for it stirred up successful imitations. The more ambitious provincial cities were no longer content with local School Boards, but desired to have a complete educational ladder of their own, including science schools, technical schools, and in some cases full-blown universities.

The past decade has witnessed some notable experiments of this kind. The generous and almost prodigal expenditure lavished on them proves that the local authorities are at last in earnest on the subject. Whatever handsome buildings, well-equipped laboratories, large staffs of teachers, and very moderate fees can do toward success is now being done. In these respects there is certainly greater danger of excess than of stinting. But numerous and varied as are the schemes either in operation or in progress, the cry is still they come.

Already the machinery of technical education is in ample if not superabundant supply. Not a single manufacturing centre of any consequence in the three kingdoms but has done something to raise its industries to a so-called scientific basis. We may now be excused if we look around for some tangible results.

Results, of course, there have been, and no doubt they will go on increasing; but the question is, Are they to be commensurate with the magnitude and cost of the machinery by which they are produced? It would be irrelevant to ask if they are being arrived at by the shortest course and with the least waste of effort. These are ideas so foreign to our educational policy that it is needless to mention them. If there had not been more than the usual amount of disregard for proportioning means to ends there might not be much ground for complaint. But the favourite weakness of our educational organisers is, we fear, being carried in this case beyond all ordinary bounds.

When the first great step toward a national system of education was taken there was every excuse for overdoing it. It was a plunge in the dark into an unknown region, our only notion of which was its immensity. Moreover, the noble and inspiring thought of raising a whole nation to a certain level of intelligence, however humble, was incompatible with haggling over the cost. A great work had to be done for the

nation as a whole, and it was a smaller risk to spend a little too much than to fall short of the desired result. At best all the education which could be given in the new primary schools would be a mere minimum of what was required for efficient citizenship. If it did not in the majority of cases do a great deal of good, it could not do much harm.

Such was the very moderate hope with which the average ratepayer undertook the burden of free universal schooling. On the one hand he could not draw a sharp line to limit expenditure, nor on the other could he insist on a minimum result. He had to leave both to chance and the professional educationists. Both ways he has been badly disappointed. The expense has far exceeded all original calculations, while the benefits are relatively small and subject to many qualifications.

The ratepayer's experience of primary schooling at the expense of the public has naturally rendered him suspicious of similar experiments in higher education. This time he wishes to see beforehand where he is going, and to learn how he may stand in the final reckoning. This is a reasonable wish when applied to secondary education, and still more so in reference to technical education. These are much smaller and more manageable undertakings than the primary schools. They have not the same universal interest; they can never have more



than a tithe of their magnitude; and specific tests of failure or success should be much easier to apply to them. In short, the primary and the higher schools stand on entirely different footings. The former must now be maintained, and possibly extended, however meagre their results. If they do nothing else, they at least relieve the nation from the disgrace of illiterate voting.

But from a national system of secondary schools we are entitled to expect a great deal more than that. We should have educational results in some degree commensurate with the labour and expense involved. In the case of technical schools even higher and more definite expectations are justified. These are special schools organised for a particular object, and if that object should not be attained they will have no *raison d'être* whatever. In technical education there are no half-way courses. Either the student qualifies himself thoroughly for the career he has selected, or he wastes his time and the public money spent on him. More than that, for those who thoroughly qualify themselves there must be a fair chance—we might almost say an assurance—of suitable employment when they are ready for it. Otherwise they may also find that their time has been wasted, and, worse still, that those who tempted them to become technologists have not kept faith with them.

Of course the question is never asked what scope the United Kingdom offers for the exercise of trained technical skill. The field for it is assumed, without the slightest examination, to be unlimited. Nor does any one appear to have considered what sort of a market there is likely to be for such technical skill when the supply of it becomes considerable, as it will do within the next three or four years. Already there are about thirty full-blown technical colleges in operation, to say nothing of the polytechnic and other institutes now to be numbered by scores. The latter are of course rather for workmen than for the scientific staffs of our technical industries; but they have also to be taken into account, as there will always be able men rising from the ranks. Another factor to be reckoned with is the new generation of provincial universities. These have from the first had a technical side, which is now being developed to meet the latest fashion. In comparing their syllabuses with those of the so-called technical colleges, it is hard to discover much difference between them, and what little there is will probably diminish from year to year.

But even if we restrict our attention to the technical colleges so-called, it will soon appear how little has been done so far to gauge their capabilities or to anticipate their probable effects. Though some of them have been in existence

for twenty years, they are not yet fully acclimatised. Not even their managers and teachers can speak positively as to their future. Whether or not British youth will ever take kindly to them; whether an adequate supply of students will be forthcoming to enable them to live up to their costly establishments; whether out of the ruck of mediocrity a sufficient percentage of bright men will emerge to restore the industrial prestige of the country; and whether the industries which are represented to be so much in need of scientific guidance will find room for them all when they arrive,—these are questions still unanswered. In fact, they have as yet hardly been mooted, much less seriously considered.

Technical education has been used as a slogan on the fiscal battlefield, but it has not been “figured out” as a business proposition. The very first of the above unsettled points—namely, how to exorcise the cricket and football manias in our public schools and replace them with some taste, however slight, for scientific study—is not yet within the range of practical politics. It seems so hopeless that even responsible statesmen shrink from treating it seriously. They consider that in the present state of public opinion all they can do is to turn an occasional laugh against the cricket maniacs. This class of pessimists includes brilliant men like Mr Balfour. At the University Alliance dinner in 1906, referring to

the old, old question of the rival claims of classics and science in education, he pointed out an important drawback common to both—namely, that science as well as classics could only be for a small minority.

You cannot [he said] keep up a system of education for a very small percentage, and if that were the only defence of a classical education I think it would have to be reserved for the few who are capable of deriving all the great advantages which to the few it is capable of imparting. But when I turn to the other side and ask what is to be substituted for it, I confess I am less happy than when I consider the classical ideal. *I think you will never find science a good medium for conveying education to classes of forty or fifty boys who don't care a farthing for the world they live in, except in so far as it concerns the cricket ground, the football field, or the river.* You will never make science a good medium of education for these boys, because only a few of them are capable at that age, or perhaps at any age, of learning all the lessons that science is capable of teaching.

If our ever-growing crowd of technical schools and colleges are to draw their students chiefly from the class of boys thus described by Mr Balfour, the filling of them is not to be an easy task. Possibly it would have been wiser to consider where the students were to come from before making such a liberal provision of professors and officials. A little more trouble might have been taken to create a *bonâ-fide* demand for technical instruction before turning on such an extensive and varied supply. A

fraction of the money prematurely spent years ago on bricks and mortar might have been very advantageously laid out in travelling scholarships, the holders of which should have been free to study at any of the large technical schools on the Continent. Technical science might thereby have been made attractive to the best class of public school and secondary school boys. They might have learned about it from each other, and a personal desire for it might have grown up amongst them. Then would have been the time to begin building and to appoint staffs of professors.

As it is, in most cases the professors are there in full strength, while the students dribble in slowly. This inverted situation is apparently not peculiar to our technical schools. It is a not unusual feature of the "science made easy" institutes which the magical wand of South Kensington has called into being. Nor can all the blame of it be justly laid on the students. The apostles of technical education are so full of ardour, and so prolific in new schemes, that they do not give one time to make a fair start before they spring some new one on us. They induced the City Guilds to spend £120,000 on a central school at South Kensington. When that missed fire they discovered that it might be better for each manufacturing centre in the provinces to provide itself with a technical institute, specially adapted to its local requirements. When a dozen

or more of these had been organised at great expense, the experts wheeled round again, and saw that there was still a vital defect in the system, and it required a central institution in London to crown the edifice and bind all its subordinate parts together.

This new idea appears to have been broached to the Sub-Committee of the Technical Education Board of the London County Council in 1902. Sir Henry Roscoe, its godfather, thus described it to the Sub-Committee:—

The most important requirement here, in order to provide the necessary training for leaders of industry, is a perfectly equipped school for theoretical and applied science similar to those of Charlottenburg, Zurich, and Munich, with several professors in each faculty, such as chemistry, engineering, &c.

All existing institutions, metropolitan and provincial, with which the new Charlottenburg might clash were airily waved aside in these terms:—

A school of this character established in a large centre like London would be better than several smaller institutions, and would do for England what such great schools as the above have done for Germany and Switzerland.

The Sub-Committee of the Technical Education Board did not directly endorse Sir Henry Roscoe's scheme, but they reported on it sympathetically.

The greatest need of London at the present time [they said] is the co-ordination of the provision for the highest grades of education and the development of new departments, so that professors of the highest distinction and practical training should have under their supervision post-graduate or other advanced students carrying out research work in such subjects as the various branches of chemical technology, electro-chemistry, optics, the different applications of electricity to industry, railway engineering, hydraulics, naval architecture, and marine engineering. It is of the highest importance to industrial wellbeing that adequate provision should be made for original investigation and discovery.

The "research student" is an old friend who has tried it on before in various other connections. He has been heard of more than once at Oxford and Cambridge. He used to be at one time an important personage at South Kensington. All the scientific societies have a leaning toward him, and would be glad to take him under their wing if he could be made self-supporting. It was inevitable that sooner or later he would catch on to the technical education movement.

Another ideal presented itself to the Sub-Committee and received honourable mention in their report. Under the sonorous title of "a leader of scientific industry" his necessary accomplishments were thus set forth:—

A good general education on the classical or modern side of a secondary school up to the age of seventeen or eighteen, special attention being given to mathematics



and elementary physics, the latter being taught in such a way as to educate the mind and fingers of the student to work accurately.

Three years' training for the B.Sc. degree, followed by

Two years post-graduate work in order to obtain the D.Sc.

The future "leader of scientific industry" would thus be three-and-twenty before he was ready to put a finger to practical work. His accomplishments would no doubt be great, and his expectations would, of course, be commensurate with them. Not every workshop in the country might suit such a gifted scientist. Certainly there are few firms who could afford to employ many of them. And after all that is the crucial question. What use is to be made of the new race of technical scientists when they have been produced? Has it ever occurred to the would-be creators of British Charlottenburgs what is the real extent of our technical industries, and what scope they offer for scientific work of the Charlottenburg type? There are under inspection in the United Kingdom about 100,000 factories, 145,000 workshops, 2400 docks, wharves, and quays, and 4300 warehouses. The factories and workshops embrace everything from a laundry up to an armour-plate rolling-mill. How many of them may be supposed to require a resident scientific staff? On a very liberal estimate, perhaps 2 per cent.

That would limit the technical scientist to 2000



factories and 2900 workshops of all sizes, but the great majority of them small. The industrial establishments large enough to absorb a tenth part of the graduates whom even a moderate-sized Charlottenburg could turn out in a single year may be counted on the fingers of two hands. The rest of our "leaders of scientific industry" would either have to cultivate science for its own sake or to subside into the crowded ranks of science teachers. Now and then a benevolent millionaire might provide competitive endowments for a few of them, but these would be windfalls not to be taken into account in an ideal scientific economy.

Moreover, the coming "leaders of scientific industry" may not be so scrupulously scientific as they consider themselves. It is to be observed that their Charlottenburg schemes are completely oblivious of practical data. If they had been put forward by business men they would have been expected to show, or at least to estimate, the probable demand for the article they proposed to supply. But the question of demand is never even named,—for a good reason, perhaps, in so far as the necessary data for estimating it does not yet exist. We talk glibly about placing our industries on a scientific basis, when we have not even taken the trouble to make a classified census of them in order to find out how many admit of scientific development and how many do not. Where technical science is not really needed—

which may be the case in more than three-fourths of our factories and workshops—theoretical scientists will never be able to force it on them.

The first step toward creating “leaders of scientific industry” should have been to obtain exact information about the scientific industries in existence and their actual conditions. The scientists ought to have done as Mr Chamberlain did in his fiscal campaign. He gathered around him representatives of all our staple industries and gave them a free hand to frame a model tariff. The same class of men should have been invited years ago to frame a scheme of technical education suited to their various needs. With their help it could have been found out how many establishments there were requiring skilled chemists, how many requiring electricians, metallurgists, and so on.

The same inquiry might have been extended to the existing supply of industrial scientists. Already trained chemists, metallurgists, electricians, &c., are being turned out by institutions which do a large amount of technical work in the old-fashioned way and under old-fashioned names. Why should the whole of that be calmly ignored by the promoters of our latest new fad? The only reply attempted to this question is a challenge to look at Germany and see how many technical high schools she has, how many thousand students they train annually, what mouth-watering subventions they receive from the State, and what a

magnificent return they make in the shape of huge additions to the produce of German industry.

Nearly all comparisons between English and German institutions are shallow and misleading, and this one is peculiarly so. First of all, the fundamental assumption happens to be wrong. Germany has only nine technical high schools—less than a third, or even a fourth, of the number of institutions assuming the name in this country. As to the large number of students trained, it has to be remembered that they are not for Germany alone. In consequence of their reputation for thoroughness and reliability they are in demand all over the world. The United States and our own colonies provide a large outlet for them. A brand-new English Charlottenburg would require a good many years to establish even a mediocre reputation abroad.

A third advantage which the technical high schools had in Germany lay in the splendid opportunities they found for creating new industries. They revolutionised certain branches of chemistry, and have taken absolute possession of them. They also opened up new ground in metallurgy. If they had been limited to the requirements of existing industries their technical science would have won few of its brilliant victories. The fifty millions sterling a-year which they claim to be earning from their new chemical processes is by far the largest item on the credit side of their account. The future may

have more such scientific triumphs in store, and not for German chemists only, but no nation can safely reckon on their happening. They would not be a safe basis for a brand-new British Charlottenburg, especially if it were to be financed with the lordly contempt for expense which has hitherto characterised our educational empirics.

Finally, as to the liberal subventions enjoyed by technical scientists in Germany and so much envied at South Kensington, that, it should be observed, is not merely a question of money. There is in it another and much more difficult question of money's worth. South Kensington has far less reason to complain of a niggardly nation than the niggardly nation has reason to regret the waste and extravagance of South Kensington. The quality of the return obtained for education grants and taxes has too often been in inverse ratio to the expenditure. In Germany both the army and the public schools yield a maximum return for the money spent on them. We on the other hand have a maximum expenditure combined with minimum results—sometimes even with positively bad results. The worst thing that can ever happen to an Englishman is to become suddenly rich, and the most flagrant illustrators of the fact are our national educators.

Sir Henry Roscoe has many competitors in his championship of technical science *à la* South Kensington. They are active and zealous all of

them, hardly less so than the fiscal campaigners. Opportunities are never lacking for them to plead their cause, and the variety of their pleas says much for their ingenuity. The fiscal campaign had not been long in progress before they tacked their favourite theme on to it. In a University Extension lecture at Oxford, Sir Philip Magnus very cleverly introduced the fiscal question with an innocent-looking remark that tariffs were all very well, but the chief promoter of foreign trade was scientific research.

If [he said] they studied the history of any of the great inventions which had revolutionised the manner in which the trade of a country was developed, they might confidently assert that the progress of trade depended more on the adaptations of science than on any other cause.

This and other very plausible statements of the same class were delicately turned so as to suggest that schools of technical science were the principal if not the only breeding-ground for inventors. Sir Philip Magnus very wisely refrained from statistical proof of his dictum. He took for granted that inventors are always welcome—except at the Patent Office; and he assumed—which he was much less entitled to do—that the majority of them issue from homes of scientific research. He went almost as far as to suggest that the larger our means of scientific training the more inventors were likely to be produced within a given time. But even a popular audience was in danger of

detecting the one-sidedness of Sir Philip's reasoning. It might have known that inventors are an erratic race; that they cannot be made to order even in a specially constituted Charlottenburg.

The main proposition of Sir Philip Magnus, that great inventions have influenced the course of trade more than any other cause, may be indisputable. Not so, however, is his suggested inference that such inventions have been derived chiefly from scientific research. Hitherto the workshop has produced many more of them than the laboratory, while not a few have originated outside of both. The practical question for the future is how to obtain the best possible results from laboratory and workshop alike. All practical authorities are now agreed that the highest results are to be secured by close co-operation. The best form of scientific research will be that which gets into closest touch with the industries growing out of it.

So far South Kensington has never yet succeeded in getting into close touch with any industry. It has flooded the country with certificated dabblers in many arts and sciences, but its influence has never extended far beyond the radius of its annual grants. That it has not reached our workshops is proved by the sad account of their defects given by South Kensington itself. Those who have had control of our scientific education in the past unconsciously condemn themselves by their urgent demands for a complete change of system. Nor

is it in general science alone that they have been but indifferently successful. One of the earliest experiments in technical education was made at South Kensington, and little came of it while it was left entirely to the theoretical scientists. Only when it developed into a practical school of engineering did it begin to justify its existence.

We may now congratulate ourselves, however, on having finally escaped from the toils of the Charlottenburgers. Their airy scheme for training post-graduates and endowing science at large has received its quietus from the new Imperial College of Science and Technology.<sup>1</sup> This, instead of being a copy of some transcendental German model, will be a national and practical institution. Far from creating fresh competition with existing technical schools, it gathers together a group of the highest of those and links them up. In its capacious bosom the old School of Mines with its honourable record of useful work, the Engineering School of the City and Guilds, the Science School for Teachers, and probably several others, will be all co-ordinated and combined. It will have the further advantage of starting on good terms with the provincial universities which an imported Charlottenburg could not have done.

Manchester, Liverpool, Birmingham, Leeds, Sheffield, Newcastle, and other industrial centres, have all made liberal provision for scientific education adapted to their local needs. It would

<sup>1</sup> See Chapter VIII.



be obviously unwise and wasteful for any of the older universities to attempt to compete with them in their local specialties. Oxford and Cambridge are, by geographical situation and other conditions, limited to theoretical science, while the industrial universities must necessarily give their chief attention to applied science. A similar distinction will have to be drawn between the pure science side of South Kensington, as now represented by the University of London, and the applied science side represented by the Imperial College of Science and Technology.

Overlapping and rivalry cannot, perhaps, be altogether avoided at the outset, but common-sense will ultimately discover a key to harmonious co-operation. It is already something to the good that the industrial universities need no longer fear that they will be overshadowed by some brand-new scientific Olympus "made in Germany." They may follow out in peace and security the programme so well summarised by Mr Chamberlain in one of his addresses to the Birmingham University Council.

We keep perpetually in view [said Mr Chamberlain] the primary object of a university—that it is to be a seat of all learning and an establishment for the promotion of original research; but we also keep in view the intention with which we started. Our university shall, in some of its features at any rate, be specialised in accordance with modern conditions and with the particular needs of the district for whose benefit it is



established. Accordingly, in these new buildings you will find preparations made to unite the highest theoretical teaching with the most advanced technical training.

The broader basis offers obvious advantages over the narrower one. Any industrial centre that can afford a technical college may go a little further and have a university—not necessarily a large one or with a full curriculum, but something more useful to the district than a mere science school. Liverpool, Manchester, and Leeds are all moving in this direction; and the time may not be far distant when pedantic distinctions between technical science and general science will disappear.

Specialising does not suit the genius of the English people, however popular it may be with the Germans. In all branches of our education, and particularly in science teaching, it has been carried much too far. A reversion to simpler methods and plainer names will be decidedly wholesome. As for the idea that a dearth of technical science has hindered either our industrial or commercial progress, a very brief inquiry into the facts will dissipate it. When the actual needs of the industries to which science can be largely applied, and the extent to which existing technical schools can supply them, have been ascertained, it may be seen that there is at least as much danger of a glut as of continued dearth.

When secondary education, technical education, and similar catchwords are offered as substitutes for tariff reform, it is evidently assumed that there is an unlimited field for them as well as an inexhaustible demand. But the amount that the nation can absorb has limits, while the possible supply has practically none. If we could but put it to the test, very probably there are about as many technical experts being turned out now by existing colleges as there are suitable situations waiting for them. The least that can be said is that it is an open question; for there is hardly a shred of statistical evidence one way or the other.

## CHAPTER X.—EXPLANATORY DATA.

### TEACHERS IN THE CENSUS OF 1901.

|   | MALES.        | FEMALES.       | TOTAL.         |
|---|---------------|----------------|----------------|
| Schoolmasters, teachers, professors, lecturers, &c. . . . | 58,675        | 158,406        | 217,081        |
| Others engaged in teaching . .                            | 3,224         | 1,000          | 4,224          |
|   | <u>61,899</u> | <u>159,406</u> | <u>221,305</u> |
| 1904-5—   |               |                |                |
| Teachers and pupil-teachers in primary schools . . .      | ...           | ...            | 209,926        |
| In secondary and higher schools, say . . . .              | ...           | ...            | 40,000         |
|   | <u>...</u>    | <u>...</u>     | <u>249,926</u> |

## CHAPTER X.

## HIS SCHOOLMASTERS.

WHILE our educationists are busy co-ordinating and filling up the gaps in their hierarchy, the widest gap of all—that between teachers and parents—is almost entirely overlooked. To the average parent, even among the educated classes, the ladder of learning about which he hears so much is a mystery from top to bottom. All he has to do with the education of his own children is to foot the bills, while his interest in the national schools begins and ends with payment of school-rates.

Schoolmasters are consequently a mysterious and little understood race. They work for the most part in secret, and behind closed doors. Though it is one of the commonplaces of educational science that personality is everything in teaching, ninety-nine per cent of our teachers are to the general public mere abstractions. They might be Lamas in Thibet, or even inhabitants of Saturn, for all that is known of

them outside of Education Committees. Their duties, their aims, their methods, their difficulties, their failures and successes, are confined to the professional circle. Hardly an echo of them ever reaches the outer world.

Whether the schoolmasters be to blame for this, or the parents, or both, it is one of the chief drawbacks to educational efficiency. There may be many causes for it, some of them difficult to discover. On the other hand, some are obvious enough. They originate in our ancient universities and extend all the way down to our primary schools. The practical side of education is seldom conducted like any ordinary business, and the higher the teaching institution the more peculiar its business methods become. The climax of scholastic circumlocution is, of course, reached at Oxford and Cambridge. The Oxford Don is the crowning anomaly among schoolmasters.

He does nothing like anybody else. It is quite beneath his dignity to provide a plain, straight course of teaching and to charge a definite price for it. That would be altogether too business-like. In Germany, in France, and in Scotland, there is one class of university teacher—professors and assistant professors. There is also one set of students, and the course of study is practically the same for all. Each class goes through a certain course of lectures, examinations, and laboratory work. Inclusive fees are charged, and

the student knows beforehand what he is to get for them. Outside of the class-room he can live where he pleases and as he pleases.

Our modern universities have been organised on the Scottish and German models, as was inevitable. There could be no thought of reproducing Oxford and Cambridge in the industrial centres of England. It is now only a question of time when Oxford and Cambridge will have to get into line with their younger rivals. The Don who is promiscuously tutor, lecturer, professor, examiner, proctor, master of schools, and a dozen other dignitaries, will have to get down sooner or later to solid teaching. His nominal dignities may be retained for the sake of their historical interest, but his tuition need not be mixed up and confused simply to suit them.

A handbook of Oxford or Cambridge University is a sort of academic Bradshaw. Most men would prefer wrestling with Bradshaw to wading through the intricate schedules of examinations—Preliminary, Responsions, Moderations, and Finals. "The Schools," which do the examining and degree-giving, are labyrinths of learning, full of short-cuts and wrong turnings. Few undergraduates would ever get through them without the help of tutors and official guides. It is an education in itself to find out when to take each successive stage and how to choose the easiest of the various alternatives offered.

Of all our schoolmasters, the University Dons

who preside over the heterogeneous studies and the equally heterogeneous examinations of Oxford and Cambridge are the most completely out-of-date. If simplicity and precision be the essence of sound education, they are most wanting among our highest teachers. No university syllabus in Europe, or for that matter in China, is so overlaid with erratic and bewildering details as those of our two oldest universities. Nowhere is there so much examining with such small results. The waste both of teaching and examining power would ruin any unendowed institution which had to depend on its own earnings.

Oxford has on an average 3600 undergraduates distributed over twenty-five colleges and halls. Its syllabus contains fifty-six different subjects, for each of which a chair or lectureship, or both, are maintained. In addition there is a standing army of tutors, each of whom coaches eight or ten students. A large proportion of the 3600 undergraduates do not even attempt the pass examination for a degree. Among those who do, the percentage of failures is lamentable. The number who take honours, and who consequently may be regarded as having obtained a fair university education, appears to be between 400 and 500. Allowing for duplications, that will be less than a tenth of the total number of undergraduates. In 1903-4 the total passes in honours in seven different subjects were—

|                |   |   |   |   |   |                 |
|----------------|---|---|---|---|---|-----------------|
| Modern History | . | . | . | . | . | 155             |
| Classics       | . | . | . | . | . | 139             |
| Law            | . | . | . | . | . | 48              |
| Theology       | . | . | . | . | . | 37              |
| Chemistry      | . | . | . | . | . | 33              |
| Mathematics    | . | . | . | . | . | 19              |
| Physiology     | . | . | . | . | . | 18              |
|                |   |   |   |   |   | <hr/> 449 <hr/> |

University and College dignitaries of one sort or another number probably more than the whole of the passes in honours. The above seventy men who passed in Science had had the services of thirty-three teachers, and a few college lecturers as well—one teacher to every two students who made a creditable examination.

Whatever virtues the tutorial system may have—and doubtless it has some which should not be lightly sacrificed—it is obviously incapable of dealing with the large numbers of students who now flock to Oxford and Cambridge. It was in its element when the Colleges contained thirty or forty scholars each; but that day has long passed. The larger Colleges—Christ Church, Balliol, and New College—have from 250 to 300 each. They are small universities in themselves, and might do a great deal more teaching if they were conducted on professorial instead of tutorial lines. The tutor is an anachronism; his *raison d'être* has to a large extent vanished. Originally he was not a teacher at all, but a guardian of the College



scholars—their trustee, banker, and purveyor-general. It is said of the early days of Westminster School, which was practically a college, that—

Every Queen's scholar and pensioner had to be under the guidance of a tutor. The tutor was responsible for the pupil's behaviour, and—a matter of equal importance to the College—for his dues and charges. The tutor supplied his pupil with raiment, bedding, and other necessities, and in cases of sickness took the boy away. The tutors seem also to have exercised some general supervision over their pupils' studies.<sup>1</sup>

The tutorial system may be partly responsible for the peculiar methods of book-keeping which survive at Oxford and Cambridge. That is another monastic anomaly which might with advantage be modernised. "Battels" may be interesting to antiquarians, but they are puzzling to parents. It is to be feared that they also furnish facilities for the youthful extravagance which has long been a blot on university life. They are a comparatively modern abuse, with no flavour either of antiquity or sanctity about it. A rational boarding system like that of the Public Schools and the modern hostels would be an easy cure for it. The Dons may, however, put off this and other simple reforms till it is too late. Meanwhile their strange backwardness reflects not only on their business capacity, but on their moral sense. If they cannot coach more than 10 per

<sup>1</sup> Sargeant's 'Annals of Westminster School,' p. 16.

cent of their undergraduates up to the level of an honours pass, they might at least refrain from cultivating habits of luxury and extravagance among the other 90 per cent.

In this respect our university teachers do not compare favourably with the class next below them—the public school masters. Whatever technical defects the public schools may have as teaching agencies, no one can come even casually in contact with them without being struck by their healthy moral tone. They faithfully reflect the morality of the upper middle class from which their best teachers and their best boys are drawn. Their healthy regimen, strict discipline, simple pleasures, and systematic work form an ideal training in themselves, apart from any scraps of Greek, Latin, and English which the boys may pick up concurrently.

Pervading and enveloping this healthy school life, there is a religious atmosphere natural and unaffected. Without pietism or pretence it unconsciously influences the whole routine of the school and finds its highest expression in the school chapel. The Sunday services there always strike people hearing them for the first time as peculiarly devout and impressive. A confirmation in them is a very solemn occasion indeed. It sets the seal of religion on a boy's school life, and even on careless boys it has a long abiding influence. As Mr How observes in his 'Six Great Schoolmasters'—

It is difficult to imagine a more sacred charge than that of some five or six hundred boys who are to be among the clergy, lawyers, and statesmen of the country. That the headmaster should be in orders, should use his opportunities in the pulpit and in classes for confirmation, and should be able to administer the Holy Communion to his boys, seems to most people a matter needing no argument in its favour.

Taking it altogether, the public school comes nearest a truly "all round" education, religious as well as secular, and is doing the best educational work at the present moment. Its teachers may not be the most up-to-date or the most prominent in the public eye, but they are sowing the best seed, and their scholars will reap the finest if not the richest harvest in after years. Unfortunately there are not many such schoolmasters. Compared with the vast and growing army of primary school teachers, there are only a handful in the public schools. And the small amount of good they succeed in doing is liable to be almost immediately undone in the relaxing atmosphere of universities or business life.

Why is it that when a boy goes from a well-conducted public school to Oxford or Cambridge he should be thrown back, as it were, into a ruder age both morally and intellectually? The discipline which had suited him so well and made a little man of him is suddenly thrown off, and a false independence is given him in its place. He is plunged into temptations, and allowed, if

not actually encouraged, to indulge in pleasures he would never have thought of at school. At the very moment when his need of guidance is increased tenfold, the watchful eye of a sympathetic master is superseded by a proctor and his "bull-dogs"—survivals of fifteenth-century police.

The so-called discipline of Oxford and Cambridge was originally designed for rustic scholars who combined grammar and philosophy with the manners of boors and swash-bucklers. A proctor hunt was the best of fun to them, and a town-and-gown row had greater attractions than any tripos. The University required special police to maintain order and keep the peace—duties in which they have now to be frequently assisted by the ordinary constable. To require of modern undergraduates, who are assumed to be men of culture and gentle breeding, no higher standard of conduct than was forcibly imposed on roystering sizars and bursars four centuries ago is surely mistaken kindness. It is also a sorry paradox that the morals of a boy should be so scrupulously guarded up to the day he quits a public school, while from the day he enters Oxford or Cambridge nothing more should be expected of him than abstinence from open rowdyism. House-masters at Eton or Harrow or Rugby are often a boy's best friends, but a university proctor is simply a glorified policeman. He may suggest quite as much mischief as he prevents.

Not only in the public schools proper but in most of the higher schools for middle-class boys personal influence is a strong point among the masters. They may be inferior to the best class of primary school teachers in the technique of their work, but they understand the material they are dealing with, and if they do not put very much into the boys they contrive to draw a good deal out. They are sometimes reproached with letting themselves down too much and forgetting the ancient dignity of cane and cassock. It is a question, however, if the dignity of cane and cassock could have been much longer maintained. Their day had passed.

Schoolmasters of university grade are a very select body at best. Even when we add to them the masters of public schools and secondary schools generally, the total will still be insignificant compared with the two hundred thousand teachers in elementary schools. No one seems to have yet realised what an immense power is gradually passing into the hands of this scholastic army. Year by year it grows not only in numbers but in professional skill, in organisation, and in influence. More than any other class in the community, it will have the moulding of our future. Legislators, agitators, passive resisters, and politicians at large will be mere flies on the wheel beside the National Union of Teachers when it gets to work in earnest.

It is a trifling matter who may be the Dr

Cliffords or the Lord Hugh Cecils of the next generation. It is a serious matter what sort of men the schoolmasters are to be, especially those of the elementary schools. They will be able to do more in a day for any creed or principle they may hold than the House of Commons could do in a whole Parliament. But absurd as it may seem, they are the unknown quantity in the great educational problem. They hold the real key to the religious difficulty as well as to various others.

To the older men of the present generation it seems only the other day that England awoke to the fact that it was, according to modern ideas, a comparatively illiterate nation. Several millions of its poor children had seldom if ever seen the inside of a school. Several other millions who did attend with greater or less irregularity were picking up only educational crumbs. The country was warned by zealous educationists that it was in serious danger of being left behind in the march of progress. For once the English people were thoroughly startled. They set to with characteristic energy to round up all uneducated and neglected children. Through the length and breadth of the land there was a great commotion, electing school boards, building schools, and gathering in scholars.

The mechanical part of the work was done *con amore*. If the children could have been trained as easily as they were rounded up, classified, and

“standardised,” the Education Act of 1870 would have been a magnificent success. At first it was thought that the new system would work as smoothly as a cotton mill. Given big enough schools, plenty of teachers, and the requisite engine power, how could it fail? It was even hoped that middle-class education could be speedily reformed on the same lines. All the old endowed schools, grammar schools, and educational charities were overhauled by Royal Commissioners, who deliberately shelved the pious founder and reorganised everything on the nineteenth-century pattern.

Free schools and free churches were to be the double crown of modern Liberalism—a fitting climax to free trade, free land, and a free breakfast-table. Education was no longer to be confined within the narrow channels of national prejudice. It was to be internationalised, and nations were to borrow from each other all new improvements in teaching and school management. We became frequent and generous borrowers. German models, French models, Swiss models were held up to our cosmopolitan admiration. Foreign copies and domestic originals were blended together in one grand educational kaleidoscope.

The most palpable result of all that kaleidoscopic activity of our educational reformers is that we are now saddled with an army of professional teachers far exceeding in number our



army of soldiers, and also more costly. In the census of 1901 (England and Wales) the two will be found figuring side by side as follows:—

## MILITARY.

|  |   |   |                |
|--|---|---|----------------|
| Army officers (effective and retired)  | . | . | 13,175         |
| Soldiers and non-commissioned officers | . | . | 99,707         |
| Total                                  | . | . | <u>112,882</u> |

## EDUCATIONAL.

|   |   |   |                |
|---|---|---|----------------|
| Schoolmasters, professors, teachers, lecturers— |   |   |                |
| Male  | . | . | 58,675         |
| Female  | . | . | 158,406        |
| Others concerned in teaching—                   |   |   |                |
| Male  | . | . | 3,224          |
| Female  | . | . | 1,000          |
| Total   | . | . | <u>221,305</u> |

In 1901 there were in England and Wales nine teachers for every clergyman of the Church of England; sixteen for every Nonconformist minister, Catholic priests included; eleven for every barrister and solicitor; and ten for every medical man. They were also increasing more rapidly than any other profession. Their rate of growth is not less than 3 per cent per annum, which for the six years since last census would amount to 18 per cent, or 40,000 persons. We may therefore assume that our army of schoolmasters—male and female—is to-day fully a quarter of a million. As armies go, it is exceptionally well paid, educational salaries ranging from £60 up to



thousands a-year. An average of only £80 per head would produce a total of twenty millions sterling per annum—a decidedly larger aggregate income than any other learned profession enjoys.

The one thing lacking in the lower ranks of the scholastic profession is social status. If they only possessed that their power and influence would be irresistible. The schoolmaster has at this moment greater potentialities than any politician, clergyman, lawyer, or doctor. His influence comes next to that of the press. But the last thing thought of by educationists is to recruit the right kind of men for the office, and to train them in the right way. They have hitherto been fairly well trained, thanks to the fact of so many of them having passed through religious training colleges. In future another kind of training is to be preferred for teachers, and we may not have long to wait for samples of its results.

The new training colleges founded on County Council Christianity may throw open a wide door to Secularism, Socialism, and even worse 'isms. The Socialist leaders already perceive what a splendid field the elementary schools afford for their peculiar propaganda. What better career can they offer to their sons and daughters than to enter the teaching profession, and in a discreet way play the Socialist missionary? Ninety per cent of our elementary teachers have themselves

been brought up in elementary schools. They are the children of working people, and bring to their work all the prejudices and limitations of their class.

Need we wonder if there should be among the younger of them a strong Socialist and Secularist bias? Such training and teaching as theirs produces Socialism as its natural fruit. The rapid growth of trade unionism after 1870 was not altogether unconnected with the new school system then introduced. The unrest which is steadily spreading among the working classes springs from seed which may easily be sown at school. Meanwhile the middle and upper classes see the evil only when it comes to a head. Even then they can do nothing but violently abuse it. If they seriously desired to check it they would begin with the schoolmasters. They would endeavour to provide the elementary schools with a higher class of teaching socially and intellectually. They might if they would supply teachers of their own class—men and women free from the bias and the envy of a narrow upbringing.

Academic snobbishness, however, bars the way. Any graduate of Girton or Newnham accepting a position in a Council School, however well paid, would be academically excommunicated! This prejudice of the university Brahmins descends to the public schools, and from them to all middle-class schools. It opens up a social gulf between them and the elementary schools—a doubly

suicidal policy from the middle-class point of view. It deprives the elementary schools of a moral and intellectual influence far more valuable than any code can supply. At the same time it shuts out the sons and daughters of the middle class from a large field of honourable and well-paid employment, by far the largest, in fact, of its kind. For one salary over £200 a-year paid in public schools there are at least ten in elementary schools.

Not the least of the absurd ironies in our school system is that the higher the school socially, and the more important the master's work, the worse he is paid. Actual examples of this will be within the knowledge of every educated reader. Not only does the aggregate expenditure on elementary education completely overshadow that in all the higher grades, but the position and prospects of elementary teachers are in various ways better. Of the twenty millions sterling a-year which we have estimated to be the annual income of the teaching profession as a whole, not one-fifth goes to the middle-class section of it. The working-class section gets the other four-fifths. In a general way it may be said that the working class provides the bulk of our teachers, while the middle class has to find the bulk of the money to pay for them.

The moral argument for greater interest of the middle class in our elementary schools may not appeal to everybody, but the financial argument

should appeal to all. In these days, when class jealousies are being so unscrupulously fostered and exploited for political purposes, the real state of the account as between the working class and those above it should be clearly understood. As regards education it shows a large balance in favour of the working class. Not only is much more done for their schools than for those of any other class, but they have a practical monopoly of the teaching in them.

In order to complete the paradox, while working-class boys are being bribed by scholarships to climb to the very top of the ladder of learning, and to make the most they can out of every rung in it, there must be no climbing down from secondary schools to elementary! If more ironies be wanted, contrast the fuss that is always being made about elementary schools being thoroughly equipped and up-to-date, with the callous indifference of middle-class parents about the comfort and sanitary condition of their own schools. Compare, again, the trouble that is taken, both by local and central authorities, over the technical training of elementary teachers, with the happy-go-lucky way in which secondary teachers have to pick up the practical part of their work.

It would seem as if the Board of Education could not do enough for its machine-made pedagogues. Not only are they boarded and

taught in special colleges, but their office is magnified in every possible way. Whitehall swarms with educational experts who, when they are not drawing up new regulations or revising codes, are writing special reports on some new method of teaching which has been invented by the educational specialists of Berlin or Bucharest. At one time the Literary Department of the Board of Education became so exuberant as to overshadow the regular work, and its wings had to be clipped. It still breaks out occasionally, however.

Few people realise how rapidly the schoolmaster is becoming a political power. Dominie Sampson has expanded into an organisation really and truly prodigious! It has its commander-in-chief, its headquarters staff, and its intelligence department the same as the War Office. Its inspectors-general, inspectors, and assistant-inspectors roam all over the three kingdoms, criticising and giving orders. School managers and education committees form its militia and volunteers.

Not the least significant analogy between the two armies—the educational and the military—is that both are passing gradually into the hands of experts. The country has already lost control of its military force, the experts having taken it over entirely. Our educational experts are not yet quite so arrogant, but events are shaping in the same direction. In another twenty years the

Board of Education may be almost as impenetrable as the War Office, and its methods as unintelligible to common people. Hitherto it has had occasional relapses into common-sense—as for instance, when it put its foot down on the promiscuous essay-writing of its Literary Department.

Essay-writing under various disguises—inspectors' reports, special reports, &c.—has long been a mania at headquarters. It made a very modest beginning years ago with short notes on professional trips to the Continent, ostensibly to examine some Swiss or German novelty in the way of teaching. These were, as a rule, bald, flimsy productions, like consular reports of the period. Inspectors' reports of the same period were remarkable in other ways. They were seldom bald or flimsy, but the contortions to which they subjected the Queen's English put it to the severest test it had ever undergone. School inspectors' English became the butt of irreverent journalists; but happily it is dying out, even in remote districts.

Under what may be termed the Sadler *régime* at the Board of Education, the essay-writers reached their apotheosis. Armed with special grants for expenses, they compassed land and sea, investigating the educational systems of foreign countries. Series after series of reports was issued in various forms—singly, in batches, and in

volumes. Between 1876 and 1902 no less than eleven volumes appeared—quite an *Encyclopædia Britannica* for schoolmasters. Lists of the contents of each volume can be obtained from the Government printers, and the lay reader who ventures to glance through them will be amazed at the variety of points of view from which education can be studied, or at least written about. Peculiarly fascinating subjects, picked at random from the six-and-twenty essays in the first volume, are—Brushwork in an Elementary School; the French System of Higher Primary Schools; Real Schulen in Berlin; Ober Real Schulen of Prussia, with special reference to the Ober Real Schule at Charlottenburg; Holiday courses in France and Germany for instruction in Modern Languages; Arrangements for the admission of Women to the chief Universities in the British Empire and in foreign countries.

Volume two was less cosmopolitan, and more domestic. It contained descriptions of the Welsh Intermediate Education Act, 1889; the London Polytechnic Institutions (by Mr Sydney Webb); the London School of Economics and Political Science—all well worthy of having special attention called to them, though it may be questioned if cheaper and better methods of publicity than this could not have been found. The third volume relapsed again into cosmopolitanism, nearly all of its fourteen papers being devoted



to Germany, Switzerland, Belgium, Sweden, and Finland. Altogether five of the eleven volumes were mainly foreign; two were mainly colonial; two were American, and the small remainder English.

Of the two English volumes, one was taken up entirely with preparatory schools for boys and their place in secondary education. About forty schoolmasters and one schoolmistress contributed to it, so that the subject should have been pretty well threshed out among them. School management, equipment, entrance examinations, timetables, health and physical training, workshops, gardening, singing, music, school libraries, and games were all discussed by this grand combination of experts. If the public had felt a proportionate interest in the subject, and bought the volume to a moderate extent, all might have been well; but apparently they did not. There was no market for the encyclopædic reports, and a philistine Treasury, having discovered that unfortunate fact, objected to continuing the special grants.

Admitting the necessity, or at least the advisability of our educational experts keeping in touch with foreign progress, that may be done in many different ways, and the one hitherto adopted was possibly not the best. In a short time printed reports, however well written, get out of date and become mere lumber. There must be tons of them now in the Education Department or at the Government printers. A portion of the money



they cost might have been more usefully spent in sending over small deputations of capable teachers to see for themselves these foreign methods. They could have carried away much more than they obtained from the expert reports, and they would not have gone out of date as quickly as the reports did.

Mr Moseley's Education Commission to the United States is likely to prove a better way of giving our teachers the benefit of foreign example and experience than the roving commissions and essay-writing of the Board of Education's Intelligence Department. But the latter need not sulk, and imagine that its occupation is gone. It has much more important work waiting for it at home than it could ever have found abroad. A practically virgin field has for years been open to it, inviting attention, but receiving little or none. Hitherto the education experts have been too exclusively concerned about drafting children into schools and drilling them there. They have neglected the much more important task of following them from the school into their working lives, and observing what happens to them then.

It is not in our school lives but in our working lives that the value of education has to be tested. In comparison with that examination, academic tests and degrees are but tinsel distinctions. But what schoolmaster ever attempts to keep track of his pupils in their after-lives? The few who distinguish themselves may retain a place in his

memory, but the average boys come and go like guests at a big hotel. An ordinary tradesman has to answer to his patrons for the practical results of his work. If it does not fit or does not wear well his customer goes somewhere else. But the schoolmaster has no misfits returned on his hands. He is not held responsible for bad workmanship. He recognises such a thing only in the abstract—not in the concrete. Instead of taking any blame to himself in particular cases, he is privileged to write and publish learned essays, throwing the blame of his failures on other people—the Government, the ratepayers, the parents, anybody but himself. Like the modest artist, he prefers to do his own criticism, and an indulgent public allows him to.

The modern schoolmaster is master and servant, artist and critic, exhibitor and judge, specialist and theorist all in one. But on the whole it must be admitted that he does not often abuse his privileged position. He rarely takes advantage of it for self-glorification, though he may at times yield to the temptation to magnify his office. And against any weaknesses he may have can be set redeeming qualities that far outweigh them. He is liberally endowed with the high gifts of earnestness and sincerity. When he loves and understands his work, no man is better worth listening to regarding it. We owe to schoolmasters, especially to masters of public schools, much of the best and

wisest of our educational literature. When they speak frankly of their difficulties and shortcomings, they can be most helpful advisers both to fellow-teachers and to parents. More is the pity that there should be so little talk of the helpful sort, and so much of the pestilent sectarian kind.

## CHAPTER XI.

## HIS DOCTRINAIRES AND DISSENTERS.

THERE are two opposite sets of obstacles to the efficient working of our school system. One proceeds from the doctrinaires, political and philosophical, who regard education as a universal panacea. The other is due to the theological bodies who think only, or at least chiefly, of how it may affect their particular corner of the theological arena. In the present Government there are strenuous representatives of both these contradictory extremes. Mr Asquith and Mr Haldane are as zealous believers in education at large as Mr Lloyd-George and Mr M'Kenna are in the Nonconformist doctrine of chapel first and school afterwards.

It is impossible to conceive of a scheme of education which could equally satisfy these two extremes. The academic ideals of Messrs Asquith and Haldane belong to a wholly different world from the disestablishment ideals of Mr Lloyd-George. The University and the conventicle are as much opposed to each other as are church

and chapel. They have never loved each other or worked cordially together. Throughout the greater part of their history they have been unfriendly, not to say hostile. The doctrinaire and the dissenter have both been harmful influences in popular education. They have one redeeming merit, however, in so far as they have always tended to stultify and counteract each other.

Mr Birrell's Education Bill of 1906 bore obvious marks of the conflict there had been over it between the doctrinaire and the dissenting sections of the Cabinet. It was foredoomed by incompatibility of temper in its parents. When to that was added violent jealousies and animosities among its godparents, a still-born fate was all it could possibly expect. Doctrinaire and dissenter are an impossible educational mixture.

If continuous controversy, frequent legislation, and unlimited expenditure were the chief instruments of education, the English nation should be one of the best educated in the world. It does not, however, lay claim to that distinction. It does not even arrogate to itself the second place. With a modesty amounting almost to self-abasement, it accepts a very low place in the educational scale. Quite meekly it contrasts its school system with those of its commercial rivals, and takes a melancholy pleasure in recognising their superiority. In the practical branches of education it is most severe on its own shortcomings. All too readily, perhaps, it credits the wonderful

reports it receives from abroad about improved commercial and industrial methods. It would fain adopt every one of them as they appear, but even English rates are not unfathomable, nor is the patience of the ratepayers inexhaustible.

That we should have drifted thus far to the rear in national education is the more surprising inasmuch as the subject has been by no means neglected among us. On the contrary, it has received greater attention in this country than in any other, not excepting Germany. Nowhere has the science of education been more thoroughly studied or more clearly presented to the public mind. A large proportion of its best literature is English, and, beginning with Herbert Spencer forty years ago, English writers have done much to shape the course of education throughout the world. Herbert Spencer's essays, published in 1861, were for the past generation an educational Koran. Translated into many languages, and interpreted by many foreign admirers, they exercised for years a world-wide influence.

It was sometimes cynically remarked that the foreign translations produced a much greater effect than the originals. Be that as it may, it will always puzzle the educational historians of our age that a book so much talked about, and of such unquestionable insight, should have done so little to check the chaos into which our school system has drifted. The book said exactly what was needed at the time, and the most zealous

educationists agreed most heartily with it. In theory there was perfect accord, but in practice the results were little more than *nil*. If we compare the views set forth in 1861 with the actual conditions of the present time, how little fruit do they seem to have produced. Pregnant as they looked, they have proved barren.

Now that their author is gone, and they have lost their personal prestige, it is to be feared that the decline of their influence will be even more rapid than hitherto. Mr Spencer's own followers have set the example of revaluing his educational doctrines. Hardly had his funeral oration been pronounced by Mr Leonard Courtney than the idol began to slip down from his pedestal. Less than a month after his death an advanced educationist, Professor Sadler, discoursed to the Modern Language Association on the influence of his educational writings. This revised appreciation of them was pitched in a new key, and one to which the master had not been accustomed in his lifetime. Without frankly saying that they had been overrated, Professor Sadler pointed out quite a number of qualifications to which they were subject.

It now appears that in the hitherto oracular teaching of 1861 the educational claims of natural science were exaggerated and the educational virtues of linguistic training were undervalued. Spencer, it seems, had "never rightly allowed for the mystical side in English character or for its

loyalty to ancient and well-tested traditions." Nor did he "rightly measure the still pressing need of defensive unity in our national life. Therefore he failed to be the interpreter of many of the forces which are now most noticeable in English speech and action." He interpreted the European rather than the national spirit, whatever that may mean. After a good deal more of this high philosophy, Professor Sadler arrived at the conclusion that to certain omissions "or, if the word might be allowed, prejudices in Mr Herbert Spencer's writings on education must be traced, at any rate in part, some of the weaknesses in our system of primary and secondary education with which they had now to contend."

If Herbert Spencer is to be dethroned by his own followers, he will not be the first philosopher who has met with that posthumous fate. Nevertheless there is much in his educational writings which the ordinary man may be glad to preserve after the philosophers have given them up. Professor Sadler hardly did justice to a lower aspect of them than the one he criticised. There is in them a large amount of everyday common-sense as well as of high philosophy. Their definition of the function of education—"to prepare us for complete living"—should have been inscribed at the head of every annual code, and the most imperfect realisation of it might have saved us from many of the failures for which we are now, so to speak, sitting in sackcloth and ashes.



A complete education adapted to all the gradations of a complete life should, according to the Spencerian theory, follow this rational order—

1. Education which prepares for self-preservation.

2. That which prepares for indirect self-preservation.

3. That which prepares for parenthood.

4. That which prepares for citizenship.

5. That which prepares for the miscellaneous refinements of life.

These five definitions, stated in the order of their value not only to the individual but to society, are too self-evident to require much illustration. The first relates, of course, to the laws of health, and the second to the means of living—in other words, to the earning of a livelihood. This is the oldest of all technical sciences, the *raison d'être* of business education in its widest sense. In 1861 technical science was still unborn; Charlottenburgs were not even in the air, and the classical *régime* slumbered on peacefully without a thought of danger or rivalry. But already Herbert Spencer had evolved an educational law running counter to all current ideas—the true law for modern states which have to live neither by culture nor by classics, but by high-pressure industry.

The “livelihood” branch of education, out of which technical science has grown, was thus explained by Spencer forty years ago:—

For, leaving out only some very small classes, what are all men employed in? They are employed in the production, preparation, and distribution of commodities. And on what does the production, preparation, and distribution of commodities depend? It depends on the use of methods fitted to the respective natures of these commodities; it depends on an adequate acquaintance with their physical, chemical, and vital properties as the case may be—that is, it depends on science. This order of knowledge, which is in great part ignored in our school courses, is the order of knowledge underlying the right performances of those processes by which civilised life is made possible. Undeniable as is this truth, there seems to be no living consciousness of it: its very familiarity makes it unregarded.

Plain, practical, and lucid as that doctrine of education is; read as it has been by millions of Spencer's countrymen; quoted as it has been by thousands of his admiring disciples; equally adapted as it is to all grades of education, from elementary to academic, its influence in shaping our school system has been infinitesimal. There is, to borrow Spencer's own words, as little "living consciousness of it" to-day as there was when it was first published. The framers of our education laws, and the officials who administered them, have been as blind to its important meaning as the ratepayers themselves. It ought to have been made the corner-stone of our primary education, and then it would have influenced all the rest in the right direction. Things instead of words—"commodities," as he

calls them, in place of phrases—are what he would have taught.

After a generation of verbal teaching we are still confronted with the problem of 1861, exactly as Herbert Spencer saw it—that of a complete education preparatory to a complete life. What he understood by a complete life there can be no manner of doubt. It was a life of activity such as he knew that the bulk of mankind were destined to—work under many names and forms: industry, business, politics, religion, art, science, and social duty. *Bonâ fide* preparation of the young mind and body for actual life was the ideal he set up against the cramming and the mechanical routine which then passed for education. But his idea was powerless against convention and sectarianism.

One obvious reason why so little progress has yet been made toward the realisation of Herbert Spencer's ideal of "a complete education for a complete life" is that it has been jostled aside by fragmentary theories which cover only small sections of life. In a generation of doctrinaires, specialists, and conscientious objectors at large, there cannot be much scope for broad views or comprehensive theories. The trend of education itself is toward narrowness, especially in its higher branches. Every new type of school or university has to strike out a line of its own, and to undertake to do something better than it has been done before.

In specialising the modern university has a manifest advantage over the ancient university. It is more free to mark out an educational sphere to suit itself. It has also a more or less clean slate to write upon. In the latest crop of universities which during the past ten years have sprung up in the provinces—Manchester, Liverpool, Leeds, Sheffield, and Birmingham—this freedom of action has been fully utilised. Each of these young institutions has adopted an organisation to suit its local conditions, and a local tone has been given even to the definitions of their objects. Every charter has some distinctive peculiarity in its definition clause. This is frequently a mere question of words and phrases, but sometimes it strikes deeper.

Colleges as well as universities exhibit endless variety in this respect. From the many different versions they give of their scope, it might be inferred that it is as difficult to define university education as to frame a political creed. A most instructive, and at the same time rather amusing, selection might be made of such definitions. They are of all sorts, from the severely legal, as set out in charters and statutes, to the purely rhetorical, which may be culled from academic orations and after-dinner speeches. The very latest legal summary of an academic curriculum is to be found in the statutes of the University College, which were specially framed a year ago for the College on its affiliation with the new University

of London. Under the heading "Scope of the College" we there read—

The College shall be maintained and developed by the University, as far as the means and other duties of the University permit, as a place of teaching and research, in which wide academic culture may be secured by the variety of the subjects taught in different Faculties, including Preliminary and Intermediate Medical Studies.

That is a rather clever attempt to define the indefinable, but how much meaning, if any, is it likely to convey to the philistine or utilitarian parent on the look-out for professional training for his sons? Even parents like the writer, who are neither philistine nor utilitarian, who, on the contrary, favour the widest possible academic culture, may be tempted to suspect that the academic draughtsman was here using words for window-dressing purposes. Academic culture is no doubt an essential part of the University programme, but it is not the first part, nor the second, nor even the third. It comes at the very end, and then only for the select few who have the ability and the will to accept it. It is the Sunday and not the everyday work of the University.

For the average student a great deal too much play is made with academic culture. What he requires at the outset is sound honest teaching in certain subjects, which, as a rule, he has to learn not from choice but from necessity. What

the nature or the grounds of that necessity may be is not the business of the academic teacher. When a youth presents himself to be trained for a lawyer or a doctor or an engineer, the first duty of those who undertake to train him is to fulfil their undertaking in the most faithful and efficient manner. When they have done that they may talk to him about academic culture. He may be in a mood to appreciate it after he has got through his professional examinations, but until then he has little time for anything but hard continuous grinding.

Academic culture is all very well in its place, but that must, as a rule, be a small place in the ordinary life of an undergraduate, nine-tenths of which is made up of sheer cramming, with little leisure for anything else. Professors and tutors may calmly ignore the cramming, and fix their rapt gaze on the superior articles in the window. But it is hardly fair to the unsuspecting customer to make him think he is getting the superior article when it is, in fact, beyond his reach. He is not in a condition to take on culture, however much of it were offered him. And the cramming system could not give it him, however willing he might be to take it on.

In short, culture and cramming are the antitheses of each other. They are the good and evil principles in our university life. It would be sheer affectation to ignore the fact that in every English university, from the oldest to the

youngest, cramming has the upper hand; and it must continue to have the upper hand so long as young men have to learn how to earn a living before they can give much thought to the spiritual and intellectual enjoyment of life. The university dons who parade culture as their special *métier* are like the village shoemaker who pretended to himself that all the shoes he made were patent leathers. He disdained to acknowledge anything commoner. But even university shoemaking is not all patent leather. The bulk of it is for everyday use, and the everyday name for it is cramming. Why should it have finer names inside a university than it has outside?

University authorities will, no doubt, resent criticism like this, but they cannot get away from the obvious facts. Neither can they shift much of the responsibility on to other shoulders. They created the system of academic teaching which gives us cramming under the specious name of culture. It is they who arrange the examinations and other tests of scholarship which call for continuous and unavoidable cramming. They have devised courses of teaching foreign in almost every respect to the idea of academic culture, and the small percentage of genuine culture which emerges from it is oftener due to the individual than to the system. The best part of their *kudos* is derived not from a high average of scholarship or culture in the general body of their graduates, but from the brilliance of an



exceptional few, who would have been brilliant anyhow, whatever their *alma mater*.

Considering what a large proportion of their work is, and necessarily must be, of the bread-and-butter sort, it is hardly good taste in academic teachers to sneer at bread-and-butter subjects, and to contrast pure science with utilitarianism. A man who can earn his own living is just as likely to succeed in scientific research as a man who cannot; perhaps a little more so. And it is not Utilitarians only who feel sceptical at times about academic enthusiasm for pure reason and abstract truth. Culture and character-building are fine academic phrases doubtless. They fall far short, however, of Spencer's "complete education for a complete life."

But the man who does most of all to mutilate the Spencerian ideal of "a complete education for a complete life" is the political dissenter on the look-out for religious difficulties. A person whose conscience is always taking offence, whose religious liberty is always being violated, and who lives in daily dread lest a penny of his school rates should find its way into the hands of teachers of false doctrine, cannot be expected to prove a very robust or catholic-minded educationist. He nurses a grievance which is dearer to him than any number of schools or universities.

The grievance which Nonconformists found in the Education Act of 1902, far from being, as they alleged, a gratuitous and unprecedented outrage on



their consciences, was only a reiteration of century-old complaints, which again and again had failed to convince either the Legislature or the country. Between 1819, when education first came before the House of Commons as a national question, and 1870, when the first Education Act was passed, three epoch-making speeches were delivered on the subject. None of them showed the slightest sympathy with the Nonconformist grievance, while two of them strongly disclaimed it.

The earliest of this trio of great speeches was Lord Brougham's "Schoolmaster abroad" oration, made on the 29th January 1828.

Let the soldier [he said] be abroad if he will ; he can do nothing in this age. There is another personage—a personage less imposing ; in the eyes of some, perhaps, insignificant. The schoolmaster is abroad ; and I trust to him, armed with his primer, against the soldier in full military array.

The primer in those days was supplied mainly by the Church of England, either directly or through its offshoot, the "National Society for the Promotion of the Education of the Poor in the Principles of the Established Church."

In 1818 a Parliamentary Committee, appointed on the motion of Lord Brougham, had sent out a circular to the incumbent of every parish in England and Wales. The answers received showed that there were 19,230 day-schools, with 674,000 scholars, in operation. The State did not as yet contribute a penny toward popular education. It

did not begin till fifteen years later—namely, in 1833, when £20,000 was voted as a grant-in-aid toward the erection of schools. The administration of the vote was entrusted to the National Society, which represented the Church, and the British and Foreign School Society, a lay organisation presided over by Lord John Russell.

By general consent the two societies were treated alike, and no sensitive conscience took offence at the use of public money for teaching Church doctrines. The modern Nonconformist conscience had not yet arrived, and when it did arrive it wore an altogether different face to what it has now. Mr Bright, one of its earliest exponents, was an out-and-out voluntary. He put schools in the same category with factories, and passionately protested against the State interfering with them. They should be left, he said, entirely to private enterprise. What would he have thought of the Radical dissenters of to-day, who, with a passion hardly inferior to his own, demand that all primary schools should be taken out of the hands of the Church and turned over to the State?

The complete *volte-face* which the Nonconformist conscience has executed since Bright's time is a grotesque political episode. Then it was a free-trade conscience, developed under the auspices of the Cobden Club. Now it is a disestablishment conscience, operated by the Liberation Society. It was hard hit by the second of the three education speeches above referred to. This was Mac-

aulay's famous plea for popular schools in 1847. It will be found in Trevelyan's *Selections from his writings and speeches*. On the 18th April 1847, Lord John Russell moved to increase the education vote to £100,000, and violent opposition assailed him from two opposite quarters: on one side, from the opponents of popular education, and on the other from the rabid voluntaries. Macaulay having demolished the first set of objectors, turned on the dissenters and overwhelmed them with sarcasm. He showed them that, in setting their sectarian interests above the interests of education, they were flying in the teeth of their own history and traditions. After quoting to them what the Puritans had done in the way of school-building, and the Pilgrim Fathers, and William Penn, and Thomas Jefferson, he asked scornfully—

And against such authority as this what have you, who take the other side, to show? Can you mention a single great philosopher, a single man distinguished by his zeal for liberty, humanity, and truth, who, from the beginning of the world down to the time of the present Parliament, ever held your doctrines? You can oppose to the unanimous voice of all the wise and good of all ages and of both hemispheres nothing but a clamour, which was first heard a few months ago—a clamour in which you cannot join without condemning not only all whose memory you profess to hold in reverence, but even your former selves.

Macaulay completed his trouncing of "our modern dissenters," as he styled them, with a parody of their creed, which practically killed it.

Nowadays the term "voluntary" in connection with education survives only as a distinguishing name for Church schools.

This new theory of politics [he said] has at least the merit of originality. It may be fairly stated thus. All men have hitherto been utterly in the wrong as to the nature and objects of civil government. The great truth hidden from every preceding generation, and at length revealed in the year 1846 to some highly respectable ministers and elders of dissenting congregations, is this: Government is simply a hangman. Government ought to do nothing except by harsh and degrading means. The only business of Government is to handcuff and lock up and shoot and stab and strangle. It is odious tyranny in a Government to attempt to prevent crime by informing the understanding and elevating the moral feeling of a people. . . . Such, sir, is the new theory of government, which was first propounded in the year 1846 by some men of high note among the Non-conformists of England. It is difficult to understand how men of excellent abilities and excellent intentions—and there are, I readily admit, such men among those who hold this theory—can have fallen into so absurd and pernicious an error.

It is important to note Macaulay's twice-repeated statement that this opposition of "our modern dissenters" to State-aided education had originated only in 1846. Up to this time there had been no direct attack made by them on the Church schools. So far from it, they had in 1839 entered into a very reasonable and creditable compromise with the Church respecting the administration of its portion of the school grant. This

was embodied in a resolution adopted by the Education Committee of the Privy Council that it would only give assistance to schools "in which competent provision would be made for the instruction of children in the schools, the daily reading of a portion of Scripture forming part of such instruction."

As a further result of the compromise, a singular distinction was made between Church schools and other schools as regards inspection. It was provided that "schools connected with the Church of England should be submitted to an examination in religious instruction by inspectors appointed by the Privy Council Committee in conjunction with the archbishops." Other schools were to be subject to inspection only as regards the secular part of their teaching.

Thus, in 1839, "our modern dissenters," far from objecting to State grants to Church schools, simply stipulated that the education should be good—particularly the religious education—and that it should all be subject to Government inspection. They remained, however, in this state of sweet reasonableness only a few years. As Macaulay's speech indicated, they had broken away from it in 1846, and in 1847 they were on the warpath again *à la* Clifford. In the succeeding quarter of a century various new compromises were suggested on both sides. One which appeared in the 'Edinburgh Review'—the Whig organ—for October 1855 contained the

first germ of a school rate. It was thus set out—

The State is to provide that there be a Church school in every parish or school district, maintained by the fees of the children and by the local rates, according to the provisions of the management clauses, which school might, with the consent of the majority of the subscribers, be the National School of the parish.

For the protection of the ratepayers it was to be subject to two conditions—

1. That no child attending it, not being a baptised member of the Church, should be taught the Church catechism.

2. That no child should be instructed in the catechism or otherwise in the distinctive doctrines of the Church if his parents objected to his being so instructed.

The author of this scheme—no doubt some one well entitled to speak for the Liberal party—believed that “it would satisfy the requirements of the ratepayers,” and that “the dissenters would probably in many parishes require no further concession.” He little dreamed what a transformation “our modern dissenter” would undergo when he once got his hand into the ratepayers’ pockets and could snap his fingers at the Church. After that there was to be no more negotiating for the use of Church schools—with or without the catechism as dissenting parents might prefer. The new dissenting policy was to be to drive the Church out of the schools

and claim the management of them "for the people." Only when the Board Schools came along were the Church schools discovered to be insanitary, ill-equipped, and badly taught.

But their worst sin was left for Dr Clifford to find out. He had it providentially revealed to him that they are hotbeds of sacerdotalism and proselytising. In 1855 the Nonconformist conscience was still far from that point of enlightenment. It opposed State grants for education simply on voluntary principles. Even so late as 1870 it conducted its campaign against Mr Forster's Education Bill on the same lines. And it was in reply to them that Mr Forster made the third of the great education speeches heard in the House of Commons last century. Already, in 1869, he had exploded their "religious difficulty" with a blunt honesty which they never forgave him. He now repeated to them that "however strong might be the objections to voting State aid for religious education, no measure would be popular in the country which tended to check the teaching of religion."

That is where we stood in 1870, and where "our modern dissenter," when he returns to the attack in 1908, may discover that the country still stands. Meanwhile it may be advisable for the "modern dissenter" to take a backward glance at the past history of this crusade. Three grand attacks have been made on the Church schools—the first in 1847, the second in 1870,



and the third in 1905. Macaulay smashed up the first; Forster bravely repelled the second in the face of a threatened Nonconformist revolt; the third won a momentary success which the victors have so far been unable to make any use of.

Neither a brilliant nor a very noble record that. It has done little harm to the Church and less good to the Nonconformists. But it has been a great stumbling-block to the cause of education. Both the Council schools and the Church schools would to-day have been much more efficient if the red rag of religious liberty and equality had not been continually shaken over them. Education would have been more appreciated by parents, especially by ignorant parents, if the parson and the preacher had not kept up a running fight at the school door. Millions might have been saved to the ratepayers if the Nonconformist conscience had not instigated over-building of new schools and wasteful sacrifice of old ones.

Teaching machinery has been duplicated and the same work has been done over and over again simply because rival sets of educationists think that it should be done in different ways. When the politicians who are chiefly responsible for this muddle wind up by confessing that the greater part of the work has been badly done, all that is left for the long-suffering ratepayer is to pray that the control of national education may by-and-by fall into quieter and firmer hands. The first step



toward a consummation so devoutly to be wished will be for the House of Commons to relinquish functions of which it is quite incapable. It has got to a deadlock over the Nonconformist conscience, and there are only two ways of escape. One is to let every parish settle the religious difficulty in its own way. The other is a plunge into sheer secularism. When that plunge is taken—and we may be very near it—the Nonconformist conscience will have to answer for it. Not all the Secularists, Socialists, and Agnostics in England could ever have carried it without Nonconformist help.

## CHAPTER XII.—EXPLANATORY DATA.

### I. EXPENDITURE ON ELEMENTARY SCHOOLS—

|                   |   |   |   |             |
|-------------------|---|---|---|-------------|
| England and Wales | . | . | . | £22,934,828 |
| Scotland          | . | . | . | 2,645,834   |
| Ireland           | . | . | . | 1,474,193   |

£27,054,855

Add interest on capital value of "non-provided" schools, say £36,000,000 at 3 per cent

1,080,000

Total for elementary schools . £28,134,855

### II. SECONDARY AND TECHNICAL SCHOOLS—

#### Public expenditure.

|                   |   |   |   |            |
|-------------------|---|---|---|------------|
| England and Wales | . | . | . | £2,292,679 |
| Scotland          | . | . | . | 360,917    |
| Ireland           | . | . | . | 144,409    |

£2,798,005

#### Private expenditure.

|                   |   |   |   |             |
|-------------------|---|---|---|-------------|
| England and Wales | . | . | . | £16,650,000 |
| Scotland          | . | . | . | 1,925,000   |
| Ireland           | . | . | . | 2,160,000   |

£20,735,000

### III. UNIVERSITIES—

#### Public expenditure.

|                                |   |   |   |            |
|--------------------------------|---|---|---|------------|
| England and Wales <sup>1</sup> | . | . | . | £1,187,463 |
| Scotland                       | . | . | . | 43,000     |
| Ireland                        | . | . | . | 25,560     |

£1,256,023

#### Private expenditure.

|                   |   |   |   |            |
|-------------------|---|---|---|------------|
| England and Wales | . | . | . | £2,377,160 |
| Scotland          | . | . | . | 562,720    |
| Ireland           | . | . | . | 167,120    |

£3,107,000

|                         |   |   |   |             |
|-------------------------|---|---|---|-------------|
| Primary                 | . | . | . | £28,134,855 |
| Secondary and technical | . | . | . | 23,533,000  |
| University              | . | . | . | 4,363,023   |

Grand total . . . £56,030,878

<sup>1</sup> Includes estimated endowments.

## CHAPTER XII.

## HIS SCHOOL BILL.

Two directly opposite views may be taken of school finance. One may, as most educational authorities do, think only of how much can be spent. Or one may concentrate his attention on the return being obtained for current expenditure. For every single adherent of the latter policy there are at least a hundred who prefer the former. They allow themselves to be carried away by over zeal on behalf of what has so long been preached to them as a social and political panacea. They have got it into their heads that there cannot be too many schools or too much education. The other side of the shield—the enormous cost of our educational machinery and the poor return it has so far produced—they either do not or will not see.

Nor is it surprising that they do not. Of all our financial labyrinths, the labyrinth of educational finance is the hardest to penetrate. Army finance is plain sailing in comparison. It is all under one head and in one account. Our school

budget, on the contrary, is the sport of State officials, county officials, and parochial officials, all of them chronic spenders. It has never yet occurred to any of them to think what the grand total of their promiscuous spendings might be. To search them all out and classify them would be a herculean task. The writer does not profess to have done it exhaustively here, but he has made a beginning. As official statistics improve and become more rational the work may be carried farther, and closer estimates may be made. The reader will please remember that this is perhaps the first attempt that has been made to ascertain the cost of all our various grades and kinds of education, public and private, primary, secondary, and university.

The conclusions which the ordinary layman, not being either a scientist or an educationist, will draw from the data about to be presented are—

First, that our expenditure on education, direct and indirect, is very much greater than is generally suspected.

Second, that it is rapidly growing in all directions.

Third, that the returns obtained from it are in no case satisfactory, while in some—elementary education especially—they are altogether disappointing.

The true educational issue to be discussed at the present day is not how many more millions a-year the educationists might spend if they had

them, but what they are giving us for the many millions a-year they already spend. The business question, as distinguished from those of the scientists, the secularists, and the sectaries, is, are we getting reasonable value for our school bill as it now exists? There will be no difficulty in proving from the figures which follow that we are not. The educational need of the day is not how to increase expenditure, but how to render it more efficient. That will be generally admitted even by educationists and scientists as regards the lower grades. The chief difficulty will be to convince them that it is almost equally true of the higher grades, not excepting the universities themselves.

The most urgent of all educational reforms is the provision of adequate and intelligible statistics. In this respect we are all as much at sea as we were four years ago on the fiscal question. Of the two the Board of Education is perhaps in a thicker statistical fog than the Board of Trade. It publishes a bulky volume entitled 'Statistics of Public Education in England and Wales,' which in a peculiar degree merits the sarcastic description once given of an encyclopædia, that "it contains everything not worth knowing and nothing one would like to know." There are acres of figures duplicated, triplicated, and shuffled about in all sorts of ways. The cleverest chairman or clerk of an Education Committee might get muddled up among them. And not one table in

twenty could be put to any practical use if we did understand it.

If these official statistics are worse in any one respect than in another it is in their financial tables. They bristle with "aid grants," "produce of penny rates," and "grants per scholar," but not a single table attempts to give a bird's-eye view of the financial position as a whole. The only public document in which that can be found is a special return moved for by Mr Thomas O'Donnell on April 1906. It is the nearest approach that the Board of Education has made to a proper financial statement. But even if the official returns were adequate they would not cover the whole field. The educational income of the United Kingdom has a variety of sources outside of rates and taxes. The pious founder, the private donor, the proprietary school, and various other auxiliaries have to be counted in. To obtain a complete record of all these is not yet practicable, and the most liberal estimate that can be formed of them is likely to fall short of the reality.

By piecing together the official statistics of schools under public supervision and adding to them all that can be ascertained about semi-public and private schools, colleges, universities, &c., a rough sort of national school bill may be constructed. Though many of its details may have to be conjectural and therefore open to dispute, the grand total should be instructive. At all

events, the most fervid educationist may receive a shock when he finds that it exceeds the combined cost of the army and navy. The series of tables given below dealing successively with elementary, secondary, and technical and university education reach the startling aggregate of over fifty-six millions sterling per annum. We are thus not so very far from Sir Robert Giffen's ideal education budget of eighty millions a-year. It is in fact almost in sight.

The tables are, unless where otherwise stated, for the year 1904-5, that being the latest period for which complete local returns are available. It has the further advantage of being the year to which Mr O'Donnell's special return applies. In Table A the various branches of our expenditure on elementary education are set out—first, Government grants; second, local rates; third, endowments; fourth, contributions to Church and other “non-provided” schools; fifth, State expenditure on reformatory schools; sixth, ragged and other charity schools; seventh, Poor Law schools; eighth, cost of Central Administration.

[TABLE.

A.—PUBLIC EXPENDITURE ON ELEMENTARY EDUCATION,  
1904-5.

|   | ENGLAND<br>AND<br>WALES. | SCOTLAND.      | IRELAND.       |
|---|--------------------------|----------------|----------------|
| Grants from Imperial<br>Exchequer . . . }   | £<br>11,065,496          | £<br>1,451,020 | £<br>1,364,887 |
| Raised by Local Rates   | 8,464,555                | 1,134,242      | 26,002         |
| Church of England and<br>other voluntary school<br>subscriptions . . }                      | 1,100,000                | —              | —              |
| Educational Endowments  | 172,700                  | —              | —              |
| Poor Law Education .  | 333,376                  | —              | —              |
| Ragged and other<br>charity schools . . }   | 988,723                  | —              | —              |
| State Reformatories, &c.,   | 410,162                  | —              | —              |
| Cost of Central Admin-<br>istration . . . }   | 399,816                  | 60,172         | 83,304         |
|   | 22,934,828               | —              | —              |
| Interest on cost of "non-<br>provided" schools, say<br>£36,000,000 at 3 per<br>cent . . . } | 1,080,000                | —              | —              |

All but three of the above items are official and call for no comment or explanation. The three unofficial items are the private contributions to "non-provided" schools, the annual saving to the country through having the free use of "non-pro-



vided" school buildings, and the annual cost of ragged and other charity schools. The item of £1,100,000 has been obtained by taking an average of the amounts spent by the Church of England on elementary education during the quarter-century 1860-84, and crediting the other religious bodies who maintain schools of their own with a proportionate expenditure per head. The Church of England aggregate for these twenty-five years was £22,421,000, giving an average of £896,000 per annum. An additional £204,000 for the other religious bodies corresponds with their share of the "non-provided" school children—namely, rather more than a fifth of the whole.

The religious bodies, besides contributing largely to the support of elementary schools, have provided 13,713 school buildings rent-free to the public. Less than one-half of the children under elementary teaching in England and Wales are in Council schools. The larger half of them are still in "non-provided" or voluntary schools. On the 1st January 1906 the accommodation in each class was—

|                 | SCHOOLS. | PLACES.   |
|-----------------|----------|-----------|
| Council . . .   | 6,800    | 3,445,881 |
| Voluntary . . . | 13,713   | 3,559,160 |

Council schools have cost the ratepayers at the rate of about £20 for each child they can accommodate. For these 3,445,000 places that would

be £68,900,000. If there had been no voluntary schools another 3,559,000 places would have had to be provided at an aggregate cost to the ratepayers of £71,180,000. But the voluntary schools are not, of course, up to District Council standards in respect of style and equipment. They may not have cost more than £12 or £15 per place, and they may not now be worth more than £10 per place. But taking them at that low average—only half the cost of Council schools—they represent a capital value of £35,590,000, the annual charge on which at 3 per cent would be £1,067,700.

This sum, though not actually payable by the ratepayers at present—it remains, as it were, in abeyance—ought to be treated as an item in the cost of our elementary schools. The voluntary school buildings are an essential part of our elementary education plant, and interest on their capital value is a proper annual charge. By degrees, as voluntary schools are boycotted by the local education authorities and superseded by up-to-date Council schools, it will become a real charge. It may be good, therefore, for the ratepayers to have a foretaste of the financial effects of secularisation.

The cost of elementary education being entirely borne by the public, the whole of it can be shown in one table. But secondary and university education being partly a public and partly a private charge, an attempt has to be made to distinguish

the one from the other. These tables are therefore subdivided—the first division showing the public, while the second sets out the private expenditure. The latter, it will be observed, includes board as well as cost of tuition. In the case of pupils at boarding schools, that is the only form in which it can be given. In order to put day pupils on the same basis, an average sum per annum is estimated for board and tuition.

B.—PUBLIC EXPENDITURE ON SECONDARY AND TECHNICAL EDUCATION, 1904-5.

|                                | ENGLAND<br>AND<br>WALES. | SCOTLAND.    | IRELAND.    |
|--------------------------------|--------------------------|--------------|-------------|
| From Government Grants . . .   | £<br>605,308             | £<br>113,912 | £<br>31,524 |
| " Local Taxation Account . . . | 918,796                  | 247,005      | 112,885     |
| " Local sources . . . . .      | 768,575 <sup>1</sup>     | 2            | 2           |
|                                | 2,292,679                | 360,917      | 144,409     |

<sup>1</sup> Includes expenditure on higher elementary education.

<sup>2</sup> Not ascertainable.

[TABLE.]

B.—PRIVATE EXPENDITURE ON SECONDARY SCHOOLS,  
1904-5.

|                                    | NUMBER. | AVERAGE<br>PER<br>HEAD. | TOTAL.     |
|------------------------------------|---------|-------------------------|------------|
|                                    | Boys.   | £                       | £          |
| I. England and Wales—              |         |                         |            |
| At Senior Public Schools . . .     | 4,500   | 120                     | 540,000    |
| " Junior Public Schools . . .      | 8,500   | 100                     | 850,000    |
| " other Secondary Schools . . .    | 137,000 | 50                      | 6,850,000  |
|                                    | Girls.  |                         |            |
| " Girls' Schools over £100 a-year  | 13,000  | 120                     | 1,560,000  |
| " Girls' Schools under £100 a-year | 138,000 | 50                      | 6,850,000  |
|                                    | 300,000 | ...                     | 16,650,000 |
| II. Scotland—                      |         |                         |            |
|                                    | Boys.   |                         |            |
| At Public Schools . . . . .        | 1,500   | 100                     | 150,000    |
| " other Secondary Schools . . .    | 17,000  | 50                      | 850,000    |
|                                    | Girls.  |                         |            |
| " Girls' Schools over £100 a-year  | 1,000   | 100                     | 100,000    |
| " Girls' Schools under £100 a-year | 16,500  | 50                      | 825,000    |
|                                    | 36,000  | ...                     | 1,925,000  |
| III. Ireland—                      |         |                         |            |
| Pupils at State-grant Schools . .  | 40,000  | 50                      | 2,000,000  |
| At other Secondary Schools . . .   | 2,000   | 80                      | 160,000    |
|                                    | 42,000  | ...                     | 2,160,000  |
| Total for the United Kingdom . .   | 378,000 | ...                     | 20,735,000 |

The first section of the above table (England and Wales) has been based on an informal census of secondary schools, taken in 1897 for the information of the Committee of Council on Education. The return showed a total of 291,500 pupils, whom we may divide equally into males and females. An allowance has next to be made for increase from 1897 up to date. This may be taken at 8500—

just enough to make up an even 300,000. The boys at public schools and the better class of boarding schools can be accurately ascertained. They numbered in 1901 about 13,000, leaving 137,000 at other secondary schools. The 150,000 girls may be similarly divided into 13,000 at select secondary schools and 137,000 at ordinary ones. The aggregate cost of the whole 300,000 thus works out at over 16½ millions sterling.

For Scotland and Ireland we take the official returns of secondary and technical schools, and make a moderate addition for private schools beyond the official radius. The result is an average of two millions sterling for each country. For the whole United Kingdom the aggregate is 20¾ millions sterling.

Table C deals in the same way with university education. It also distinguishes public and private expenditure, and it has the advantage of Table B in so far as its data are more definite and positive. Actual numbers of students have been obtained, both for universities and colleges. The cost per head at the several grades of universities is closely estimated, and will, I think, be found moderate. The Government grants are official, and the sum named for endowments has the high authority of Sir Norman Lockyer, who specially investigated the subject.

[TABLE.]

C.—PUBLIC EXPENDITURE ON UNIVERSITY EDUCATION,  
1904-5.

|  | ENGLAND AND WALES. | SCOTLAND. | IRELAND. |
|--|--------------------|-----------|----------|
| Government grants .                      | £80,611            | £43,000   | £25,560  |
| Endowments, &c.—                         |                    |           |          |
| Oxford <sup>1</sup> . . . £551,580       |                    |           |          |
| Cambridge <sup>2</sup> . . . 355,272     |                    |           |          |
| Other Universities,<br>say . . . 200,000 |                    |           |          |
|  | 1,106,852          |           |          |
|  | £1,187,463         | £43,000   | £25,560  |

<sup>1</sup> University, £75,000. Colleges, £476,580.<sup>2</sup> University, £44,768. Colleges, £310,504.PRIVATE EXPENDITURE ON UNIVERSITY EDUCATION,  
1904-5.

|   | STUDENTS. | AVERAGE PER HEAD. | TOTAL.     |
|---|-----------|-------------------|------------|
| I. England and Wales—   |           |                   |            |
| Oxford and Cambridge . . .  | 7,322     | £120              | £878,640   |
| London . . .  | 8,042     | 100               | 804,200    |
| The Provinces . . .   | 5,200     | 80                | 416,080    |
| Wales . . .   | 1,388     | 80                | 111,040    |
| II. Scotland . . .  | 21,952    | ...               | £2,209,960 |
| III. Ireland . . .  | 7,034     | 80                | 562,720    |
| IV. Non-university colleges and higher technical schools, &c. . . . | 2,089     | 80                | 167,120    |
|   | 3,344     | 50                | 167,200    |
|   | 34,420    | ...               | £3,107,000 |

D.—SUMMARY OF PUBLIC AND PRIVATE EXPENDITURE ON EDUCATION (ALL GRADES), 1904-5.

|   | PUBLIC.     | PRIVATE.    | TOTAL.      |
|---|-------------|-------------|-------------|
| Elementary schools (5,249,000)—             |             |             |             |
| England and Wales . . . . .                 | £22,934,828 |             |             |
| Scotland . . . . .                          | 2,645,434   |             |             |
| Ireland . . . . .                           | 1,474,193   |             |             |
| Interest on capital value of "non-provided" |             |             |             |
| school-buildings, say . . . . .             | £36,000,000 |             |             |
| Secondary and technical schools (378,000)—  |             |             |             |
| England and Wales . . . . .                 | 2,292,679   |             |             |
| Scotland . . . . .                          | 360,917     |             |             |
| Ireland . . . . .                           | 144,409     |             |             |
| University Education (34,420)—              |             |             |             |
| England and Wales . . . . .                 | £1,187,463  |             |             |
| Scotland . . . . .                          | 43,000      |             |             |
| Ireland . . . . .                           | 25,560      |             |             |
| Average cost per head per annum—            |             |             |             |
| Elementary scholars . . . . .               | £5 3 0      |             |             |
| Secondary " . . . . .                       | 62 0 0      |             |             |
| University " . . . . .                      | 127 0 0     |             |             |
|   | £32,188,483 | £23,842,000 | £56,030,483 |

The final Table D is a synopsis of all the others. It brings out a grand total of fifty-six millions sterling of educational expenditure in the United Kingdom. The naval expenditure of last year (1906-7) was close on 28 millions, while the army expenditure was nearly  $31\frac{1}{2}$  millions. The entire cost of national defence was therefore  $59\frac{1}{2}$  millions, and the national school bill was only three millions short of it. If all the unregistered and unknown education that is being carried on could be traced, it might raise the national school bill considerably above the combined army and navy budgets.

To say the least, figures like the above should effectually dispel the delusion that we are niggardly educators. Taking our educational expenditure as a whole, not only do we compare favourably with all other countries, Germany and the United States included, but foreign critics are more likely to consider us spend-thrifts than niggards. They will wonder what becomes of these fifty-six millions sterling a-year. Some of them may be rude enough to ask us what we have to show for it in industrial and intellectual output. Anyhow, these are questions we ought to ask ourselves, or which, if we do not ask ourselves soon, will be forced upon us in some unpleasant shape.

This costly system has now had half a century of unchecked development—time enough in which to demonstrate its tendencies and capabilities.



It began with the advent of "South Kensington Science," as a sequel to the Exhibition of 1851. The next stage was the movement for modernising the universities. After that came the primary schools of 1870—free, compulsory, and universal. The next generation threw itself with headlong zeal into a technical education crusade, and in our own day desperate attempts are being made to bring all the secondary schools into line. Ours is the age of co-ordination. The next will in all likelihood be an age of drastic criticism.

The educational sky has been stormy enough of late, but the worst storm may have still to come. It is already brewing in the minds of parents, ratepayers, employers, and business men, who would like to know what all this educational extravagance is tending to. They begin to suspect that they have given the educationists and the scientists too much rope, and that it is high time to draw in. Their anxiety and mistrust have been greatly aggravated by the freely expressed disappointment of the educationists themselves. The most frank and unflattering critics of the present situation are the political and professional oracles who have taken the principal part in creating it.

The worst sign of all is the zeal and unanimity with which our educational leaders have taken to abusing their own handiwork. It is never the long-suffering parent or ratepayer who says the bitterest things about our educational failures.

It is invariably the men who have led us into them. So far the parent and the ratepayer have had merely to grin and bear it. They must, however, chuckle occasionally when they read the doleful lamentations of "experts" and "authorities" over the poor results of all their labour and outlay. During the Chamberlain campaign their sense of humour must have been specially tickled when "better education and more of it" was started as a rival shibboleth to tariff reform.

In those days Mr Haldane was chiefly known as an educationist. Schools and schoolmasters were his panacea for all the political and economic evils of the time. They were put in the forefront of his fiscal programme. "First of all," he exclaimed, "we must have an enormously better system of education." Mr Asquith said much the same thing in still stronger language. Our school system he declared to be rotten from top to bottom. These declarations may have been somewhat accentuated for electioneering purposes, but they were heartily echoed from the Conservative side. Sir John Gorst's reign at the Education Department was an almost continuous satire on its defects and futilities. Unlike the Roman augurs, he could not even keep his tongue in his cheek regarding them. He allowed it to wag now and then to the manifest discomfort of his colleagues. Sir William Anson, his successor, was not a chronic satirist like Sir John, but in

his courteous academic way he showed a similar lack of faith in the scholastic machine.

At all events, there can be no blinking the fact that, unsatisfactory as our educational results are, the burden they impose on the country becomes every year perceptibly heavier. Not only is there a steady increase in the aggregate expenditure on education, but the average cost per head increases still more rapidly. This is particularly true of our elementary schools. They now receive in Government grants alone nearly double the whole expenditure per child when the Act of 1870 came into operation. In the last year of the old voluntary system there were 1,115,389 children in average attendance at 8919 schools. The total cost of these schools was little more than a million and a half sterling, or 26s. 2d. per head, derived from the following three sources:—

|                         |   |   |   |   |                   |
|-------------------------|---|---|---|---|-------------------|
| Government grants       | . | . | . | . | £587,490          |
| School pence            | . | . | . | . | 502,022           |
| Voluntary contributions | . | . | . | . | 418,839           |
|                         |   |   |   |   | <hr/>             |
|                         |   |   |   |   | <u>£1,508,351</u> |

When the Act of 1870 had been twenty years in operation, the Government grants alone were 20s. 9d. per head—£4,392,000 for 4,230,607 of an average attendance. Five years later (1895) they had risen to 32s. 9d. per head—£8,024,060 for 4,900,000 of an average attendance. In the next five years (1900) there was a further advance

to 38s. 8d. per head—£10,237,000 for 5,292,000 of an average attendance. In 1905 the grants aggregated £13,576,000, and the attendance averaged 5,942,000, making 45s. 8d. per head. Meanwhile school-rates had been growing at an equal if not greater pace: new forms of grant were being made to technical and secondary schools; new experiments were continually being crammed into an already congested programme.

Measured by the magnitude of its organisation as well as of its working expenses, the school system of to-day is undoubtedly an immense advance on the primitive arrangements of 1870. It teaches half a dozen subjects for every one within the compass of the old-fashioned school-master. But is it turning out equally good sons and daughters, equally good workers, equally good citizens? On these points public opinion is almost universally negative. The only ground on which taxpayers can be asked or expected to submit to the insatiable demands of the educationists would be proof that education is improving proportionately both in quantity and quality. But such a proposition will find few defenders.

An unduly large proportion of our educational expenditure goes in machinery and administration. The clerical and inspecting staff of the Education Department cost for England and Wales  $3\frac{1}{2}$  per cent of the total amount of Government grants distributed. The corresponding item in Scotland is about the same, but in

Ireland it is nearly 6 per cent. Even that, however, is moderate compared with the cost of local administration. It averages in England and Wales  $12\frac{1}{2}$  per cent of the rates collected and disbursed. In Scotland it is rather lower—about 11 per cent. In Ireland it is 80 per cent—a distinction not so much due to excessive expenditure as to there being practically no school-rates.

The total sum raised in Ireland in 1904-5 from local rates for educational purposes was £26,001, 18s. 4d., and the cost of administering it was £21,194! Another Hibernian peculiarity worth noting is, that while the number of school children steadily diminishes the cost of their schooling as steadily increases. Between 1896 and 1905 the average attendance at primary schools in Ireland fell from 534,957 to 500,489. In the same decade the expenditure rose from £1,330,692 to £1,466,574. The respective averages per head were—in 1896, 50s.; and in 1905, 58s. 6d.

## CHAPTER XIII.

## WHAT HE GETS FOR IT.

THE figures in the foregoing chapter should help to dispel the delusion that John Bull is a niggard in his educational expenditure. That stigma can hardly apply to a nation which spends directly or indirectly fifty-five millions sterling on its various grades of schools, besides enjoying the benefit of past expenditure representing an annual interest of fully a million a-year. So far from being niggardly, we are rapidly advancing toward the eighty millions sterling a-year which is the wildest ideal yet suggested by the education-at-any-price enthusiasts.

The time has come for all who are capable of taking a plain common-sense view of the education question to turn round on extravagant theorists and tell them that before launching into further new and costly schemes we wish to have some positive proof of the value of the results being already produced. From our elementary schools boys and girls are being turned out at the rate of over three-quarters of a million a-year.

Where do they all go, and what are they doing by way of return for the money which has been spent on them? Every year fifty thousand middle-class children are sent out into the world with an expensive education. How far has it fitted them for the duties which they find waiting for them? How many of them have found positions for which they are well qualified, and in which they can render useful service to society? On the other hand, how many of them are failures or misfits?

Our universities, old and new, have gathered in an army of over thirty-four thousand students. Of these probably ten thousand have every year to find an outlet in some learned profession or scientific industry or the higher branches of commerce. How many of them are so fortunate as to find an open door waiting for them? Is the problem of unemployment not as acute in the highest as in the lowest ranks of labour? It may be that all branches of our education have been conducted a little too much on the lines of our mining finance—with lavish preliminary expenditure and very inadequate ultimate results. In both mining and education a great deal more thought is given to plant and machinery than to the materials they have to operate on. Elementary schools, higher elementary schools, secondary schools, high schools, technical schools, are called for like so many machines. They are set up wherever a convenient site can be found for them.

The Board of Education says they must have so many rooms, so many cubic feet per child, so many windows, so many wash-basins, so many pegs to hang clothes on, so many teachers, so many subjects that must be taught, so many that may not be taught, and so many that may or may not be taught. So complete are all the details of the machine, and so minute the rules for working it, that as soon as it is set in motion certificated scholars should pour out of it,—sunbeams should stream from the cucumbers.

But our teaching machinery, like our mining machinery, does not always work as it ought to do. There are varieties of scholars as well as varieties of ore. They cannot all be graded up to the same standard any more than all kinds of ore can be profitably treated in one mill. In many cases there may be no lode to work on, and in others it may be non-paying. The fundamental principle on which our popular education is being conducted to-day, and has been conducted for years past, is that all children are alike. If they are not alike, then Nature and not the Education Department is to blame. In the eyes of the Department they are so much teachable material. But for their inconvenient habit of growing older the teaching system might be made absolutely uniform. Differences of age demand the concession of a moderate variety of treatment. This the Department has ingeniously provided for by a scheme of annual standards.



At the end of each school year every scholar has to be "standardised" in accordance with the regulations of the latest code. After six or seven annual standardisings he receives his leaving certificate, and is allowed to go out into the world to earn a living if he can. This he may find a very different operation to his school work. While at school little or nothing had been said to him about it. It was not in the code, or in any of the text-books, and his teachers had very little time to think of such things, however well inclined. It had been almost a tabooed question—except in theoretical discussions on the principles of education.

These, of course, were no part of the school programme. They were reserved for educational conferences, essays by school inspectors, and other exhibitions of scientific pedagogy. One favourite source of them was the educational writings of the late Herbert Spencer. To hear those quoted and admiringly commented on one might have thought that Mr Spencer was the inventor of the standardising process, instead of having been one of its earliest and strongest opponents. It has been his fate as an educational reformer to illustrate once more the paradox that a philosopher's doctrines are not always most faithfully practised when they are being most loudly preached.

A very large number of our empirical educators being professed disciples of Herbert Spencer, they

must know how little has been done as yet to carry out his principles, and how much has been done in direct violation of them. Among the objects of education he gave the highest place to self-preservation, in which he included the earning of a livelihood. This he proved on scientific as well as moral grounds to be one of the first duties children should be taught and prepared for. It would have been a sound basis on which to build up a system of national education. Not only would the children themselves have benefited by early training for real life, but the nation would have had better workmen and better citizens. Labour of all kinds would not have degenerated as it has done. Our staple industries would not have been disorganised, and the progress of trade would not have been checked as it undoubtedly is to-day.

“To fit the child to earn a livelihood” was in Spencer’s time, and still is, a most seasonable motto for every teaching institution, from universities to national schools. It was needed in every grade of education—professional, technical, secondary, and primary. If our empirical educators had adopted it when it was first enunciated by Herbert Spencer, it might have saved us from a long and discouraging succession of barren experiments. But the one idea which might have given a definite purpose to popular education, and have made it helpful instead of harmful to the practical interests of the nation, was eschewed in

all education acts, codes, and text-books. "Earning a livelihood" was too vulgar a thing for the modern schoolmaster, though it had all the prestige of a great philosopher's authority behind it.

For lack of definite practical aim English education of all grades has become a mechanical process of standardising. And the higher the grade the more standardising is deemed necessary. Our boys go to school not to be educated and fitted for their future work, but to be sized up in certain exercises of memory and muscle. They are put through more examinations, inspections, and competitions than would qualify half a dozen Mandarins in China. Strange to say, Chinese methods are growing more rampant in secondary schools than in primary ones. In the latter the examination craze has had to be relaxed because of the physical impossibility of carrying it out to the bitter end.

Our primary schools are now in greater danger of making it too easy for children than too severe. The latest pedagogue fad is that they must be made to learn unconsciously. Tasks must be converted into amusements, and kindergarten methods must be applied to all standards. The good effect of such methods, even on infants, is beginning to be questioned, but on boys and girls of over ten it is obviously bad. The fact that it makes the school hours pleasant to them—the only bright spots in their lives, say the kindergarten enthusiasts—does not by any means prove

that it is good mental or moral discipline. The better they behave in school the worse they often are out of it. The quicker they learn lessons made to appear to them like play, the more at sea they find themselves when the lesson has to be practically applied.

The excessive variety of subjects in which they are invited to amuse themselves has, besides, a dissipating effect on their minds. Where concentration is aimed at, either in a child or an adult, it stands to reason that the number of objects presented to it must be limited. The more frequently the point of view is changed the more fleeting and superficial are the impressions left behind. And as the number of rapidly changing impressions increase, the more they blur and confuse each other. This natural fact, which ought to have been known even to the authors of the first code ever inflicted on our primary schools, has been illustrated in a remarkable way by the matriculation examinations of the northern universities — Manchester, Liverpool, Birmingham, Leeds, and Sheffield. They prove that the best preparatory school-work has invariably been done on the simplest lines and with the least diversity of mental strain.

That the discursive and panoramic methods of teaching now practised in our primary schools are unfavourable to mental concentration will hardly be disputed. But they have another bad effect of greater consequence still in the child's future life. They call for little or no conscious effort on its

own part. It is the teacher who has to do the hard work—especially in the kindergarten—and the pupils are more or less passive spectators. So far is this coddling policy carried by some educational authorities, that any kind of competition between schools in the same district is strictly tabooed. The strongest incentive to individual effort is thus deliberately sacrificed.

The one thought of many Education Committees nowadays is to surround school children with luxuries and refinements which they are never likely to see again in their after lives. In order that they may fully enjoy these luxuries, all unpleasant realities are to be kept far from them. Harsh truths like work, duty, and responsibility must not be allowed to intrude on their young minds. Need we wonder if, after such a training, they should leave school not only with little qualification for work of any kind, but with little desire for it? The strongest of their natural instincts—to use their hands, to do things, and to imitate their elders,—instead of being encouraged and developed, are systematically repressed. These instincts might be used by an intelligent teacher as means to develop habits of industry. Instead of being allowed to use them as such, the intelligent teacher has to devise easy and pleasant lessons by which the children may be gently coaxed up to the level of their successive standards. By the time they are fully standardised they have little enthusiasm left for Herbert Spencer's ultimate object of education, "earning a livelihood."

Not one boy or girl in a hundred leaves school with a vestige of the natural love of work inborn in all healthy children. It has been drilled out of them in the prolonged reading and spelling process. Their thin veneer of scholarship has spoiled them for learning a trade, or for doing any kind of steady work. They have had to spend eight or nine years of the most impressionable period of their lives in an artificial and enervating atmosphere. School has been to them something quite apart from home and from all their other associations. It has never been regarded by them as having any connection with home, still less with the kind of life they look forward to. Letters, figures, and signs have to be twisted in and out. One time they have to be read, and another time they have to be put on paper. Whether read or written, they are never more than hazily understood. What use they are to be afterwards is a continual puzzle to the child.

If this kind of exercise which so often begins and ends in sheer mystification were to be reduced to its simplest possible form, what a beneficent use might be made of the time thereby gained in preparing children for the real object of all education, save the very highest—to earn one's living. It may sound prosaic, superfine persons may even call it vulgar, but the art of living is after all the oldest and most important. For most of us it includes the art of earning a living. If it were made the ruling principle not merely of education but of business and of politics, we might soon hear

less of “muddling through” bungled wars and fiscal campaigns. The best test of school training—better than any examination paper or leaving certificate—is to be found in the simple question, Does it produce men able to stand on their own feet, whether as workmen or as masters, leaders of industry or humble followers?

That, after all, is the final and decisive test of school work. Evidently a very small percentage of the three-quarters of a million children who leave school every year find themselves well prepared for it. Education Committees are at last beginning to see this, and the latest agitation among them is for compulsory powers to keep children several years longer at continuation classes. Another new movement has a still more sensible aim—to trace children who have left school, and ascertain what use they are making of their education; in other words, how they are employed. In the Finchley schools such an inquiry yielded the following results:—

AFTER-EMPLOYMENT OF 562 CHILDREN FROM  
FINCHLEY SCHOOLS :—

|                     | Skilled<br>Trades. | Clerks. | Unskilled<br>Trades. |
|---------------------|--------------------|---------|----------------------|
| Long Lane . . .     | 27                 | 5       | 68                   |
| Albert Street . . . | 34                 | 17      | 40                   |
| St Mary's . . .     | 43                 | 30      | 22                   |
| St John's . . .     | 36                 | 4       | 60                   |
| Christ Church . . . | 40                 | 20      | 40                   |
| Holy Trinity . . .  | 10                 | 10      | 56                   |
|                     | —                  | —       | —                    |
|                     | 190                | 86      | 286                  |
| Percentage . . .    | 34                 | 15      | 51                   |



After receiving an up-to-date primary education, with all the latest improvements, fully one-half of the children traced sank at once into the ruck of unskilled labourers. One-third of them had the good fortune to be learning trades, and the rest were clerks and nondescripts. The only remedy which the educationists can suggest for this disappointing sequel is homœopathic. They would cure bad education by additional doses of it—to be forcibly administered, if necessary. Thus Mr Sydney Webb, in his ‘London Education in 1902,’ says :—

It ought not to be too much to ask that every boy or girl who leaves school at fourteen or fifteen should, up to twenty-one, be at any rate enrolled at some evening class institution, even if attendance is confined to an hour a - week. Yet there are in London over 600,000 young people between fourteen and twenty-one, and not a third of these are at present members of any sort of institution, recreational or educational. Out of 84,000 boys and girls between fifteen and sixteen, only 21,000 are on the rolls. What is happening to the others? <sup>1</sup>

The teachers and inspectors of elementary schools are not the least outspoken of their censors. At education conferences their shortcomings are a standard subject of regret, and compulsory attendance at evening classes is now being advocated as a means of completing the unfinished work of the day-schools. One specialist,

<sup>1</sup> London Education, p. 33.



speaking on this question at Guildford in 1905, frankly admitted that so far their elementary teaching had not only been poor, but it had been evanescent. He affirmed of the boys who had come under his notice after leaving school that

In two years they have lost the little manner they once had ; they don't look you in the face, they loaf, they fool about, they have no desire to learn, they have lost those ideals which you (teachers) implanted so laboriously.

Even when they can be induced to attend continuation classes, the teaching difficulty is not at an end. They are often found to be incapable of doing the necessary work. Sir Henry Hibbert, chairman of the Lancashire Education Committee, said recently, in explanation of the slow progress of the technical science classes, that "most technical students came ill-prepared for the education awaiting them. An enormous amount was spent on elementary education, most of which almost seemed to be wasted." So serious apparently was this obstacle that Sir Henry concluded with a warning that "the Lancashire Education Committee would not spend additional sums on higher education unless the students were themselves educationally equipped to receive it."

Let us hear now some of the latest critics of our secondary education. We still limit ourselves to professional experts and authorities. There is no need for the mere layman to add a

note to this chorus of self-condemnation. The next example will be Sir Oliver Lodge's estimate of what the average youth takes away with him from a public school:—

Some of the men who represent the average or even the higher product of our chief public schools and colleges are more or less futile for any serious purpose in life. They have excellent manners, they can own a bank account with ease and amiability, and they have a taste for good and luxurious living. Some of these youths have had every advantage throughout their lives—that is to say, they have not been handicapped by fortune in any way, yet they can do no one thing better than other people. I do not suppose they can even shoot as well as a gamekeeper; in all the facts of the universe they do not pretend to be anything but supremely ignorant.

Even the technical schools, the latest craze of up-to-date educationists, are in many cases attended with much cry and little wool. Elaborate teaching arrangements attract mere handfuls of pupils. On one occasion it was elicited from the Technical Education Committee of the London County Council that the classes at the School of Marine Engineering were being conducted with a full staff of teachers to two students! But London is apparently not regarded by our technical educators as a fair specimen of their success. Even Mr Sydney Webb admits that it lags far behind the manufacturing cities of the North. His book, already referred to, contains the following despondent confessions:—

Looked at as a mere matter of civic administration, London's educational service is, at this moment, plainly inferior to its police or its fire brigade, its lunatic asylums or even its water supply. The educational provision is scrappy and disjointed; its fragments are ill-adjusted and unco-ordinated; it is uninspired by any vivifying principle; there are great gaps in some directions, and redundancies and duplications in others. It is therefore not surprising that in spite of an expenditure every year of four millions of public money, and a large but unknown amount of private money, London education falls short of decent efficiency at many points. It fails alike at the bottom and at the top. We succeed neither in maintaining a high level of common schooling for all London's children, whatever their poverty or the creed of their parents, nor yet in disseminating culture, developing reasoning power, or promoting original research.<sup>1</sup>

Putting together what little is really known of all the thousand public elementary schools of London, including both Board and voluntary, there are competent observers who declare that nearly half of them, containing about a quarter of all the children, would probably be condemned as inefficient either in respect of building or sanitation, of staffing or equipment, of curriculum or real success in child training, by a Swiss, a Danish, a Saxon, a Prussian, or a Massachusetts school inspector.<sup>2</sup>

Mr Webb describes at some length the elaborate machinery for technical education with which London has of late years been provided. He does not, however, venture on an opinion

<sup>1</sup> London Education, Introduction, p. vii.

<sup>2</sup> Ibid., p. 16.

as to the use that is being made of this costly machinery, or the educational results which it is producing. He has much to say about the teachers and the teaching bodies, but little about the 50,000 students. It may be gathered, however, from his summary of London's technical education, that we ought to hear much more than we do of the swarms of technical experts who are hiving off every year. Where do they all go to?

The work of the Technical Education Board, dealing usually with a more advanced stage and older scholars, is concentrated on the fifty polytechnic art schools and technical institutes under its management or control, which have in the aggregate about 50,000 students. Here the lecturers and teachers are specialists in their respective subjects, teaching in institutions specially equipped for their work. At six of the Polytechnics the highest classes have been included in the faculties of the reorganised London University, and duly matriculated evening students obtain first-class university instruction in their own neighbourhood.<sup>1</sup>

From the standpoint of the parent and the ratepayer all these varieties of teaching have a common defect. No direct and definite tests can be applied to them when they are finished. A time may come when school-leaving examinations will be as common in England as in Germany and the United States, but we are far from that yet. Here and there a tentative beginning

<sup>1</sup> London Education, p. 32.

has been made, as in the case of the Northern Universities Joint Board. This is an examining body, which was instituted in 1903 to carry out a uniform matriculation scheme for the new Universities of Manchester, Liverpool, and Leeds. Afterwards Sheffield came in, giving the Board control of four universities. Now that the fairness and efficiency of the system have been demonstrated, the other English and Welsh universities may be expected to join, and make it a national institution, as it ought to be.

As the candidates for matriculation come chiefly from the public schools, the majority of the Board are public school teachers. They are consequently in touch with the boys, and able to set papers which will ask no more from them than they may be reasonably expected to know. In a word, the Northern Universities Joint Board examinations are a good test of the sort of boy that our secondary schools turn out. It was rather a shock, therefore, to the headmasters when in 1904—the first year of the experiment—only 46 per cent of the candidates passed. Next year (1905) there was an improvement to 50 per cent, but in 1906 a relapse took place to 49.5 per cent. This year (1907) the average is up again over 50 per cent. These poor results fully justify the complaints made by professors in the new universities of the unfit state in which many of their undergraduates begin their course.

But the universities themselves, both old and

new, can hardly boast of the proportion of successful examinees they turn out. At Oxford little more than 70 per cent of the matriculated students contrive to pass at all, and only about 40 per cent take a respectable degree. Subjoined are the actual figures for the three years 1883, 1893, and 1903. They show the percentage of B.A. degrees to have ranged in those years from 71.7 to 73.6, the highest percentage having been in the earliest of the three years. A still more unsatisfactory feature is that not much more than half of the B.A.s afterwards took their M.A.s. The M.A. was intended to be the hall-mark of a finished university education, but only 42 per cent of Oxford undergraduates ever reach it.

OXFORD MATRICULATIONS AND DEGREES, 1883-1903.

|                                       | 1883. | 1893. | 1903. |
|---------------------------------------|-------|-------|-------|
| Matriculations . . . . .              | 784   | 813   | 868   |
| B.A. Degrees . . . . .                | 577   | 583   | 621   |
| Percentage of B.A.s to Matriculations | 73.6  | 71.7  | 72    |
| M.A. Degrees . . . . .                | 325   | 366   | 370   |
| Percentage of M.A.s to Matriculations | 41.5  | 45    | 42.6  |
| Honours . . . . .                     |       |       | 449   |
| Percentage to Matriculations . . .    |       |       | 51    |

At first sight it may seem odd that there should be more honours than M.A.s, but the explanation is that the honour men specialise in single subjects. The above 449 is the aggregate of passes in seven different subjects—Modern History, Classics, Law, Theology, Chemistry, Mathematics,

and Physiology. It may be worth noting that in classics, which are Oxford's strong point, only 139 took honours, as against nearly 900 matriculations. It would be obviously unfair to apply to our newer universities and technical colleges, which are only in process of organisation, as severe a test as is applicable to ancient institutions like Oxford and Cambridge; but in these two the same tendency to scrappiness and breaking off in the middle are equally evident.

Of that defect two illustrations may be given—one from the top and one from the bottom of our technical teaching. At the top stands the City and Guilds Central Technical College, of which Professor Sylvanus Thompson is Principal. It has over four hundred students in its day classes, but only two-thirds of them are taking a full engineering course. The others are taking special classes—nibbling here and there. College certificates are given, we are told,

Only to those day students who have followed a complete course of at least two years in one of the three departments, and are restricted to those who show a steady record of good work done in laboratory, drawing-office, or workshops, and who also prove, by their position in the final examination, that their attainments are up to the required standard.

Of these severely limited certificates the annual average distribution is under seventy. At the City and Guilds Central Technical College they are severe judges not merely of their own work, but



of technical education generally. The professor of electrical engineering, Mr Armstrong, has come out strongly among the adverse critics of machine-made technical science. Last May he reviewed in 'The Times' Professor Meldola's essay on "The Position and Prospects of Chemical Research in Great Britain," and quoted with approval his friend's startling declaration that "many of our universities are distinct failures as centres of chemical research, and the local output of work from university laboratories is by no means worthy of the great traditions of this country as a pioneering nation in scientific discovery." As for the twenty-three London Polytechnics, Professor Meldola dismissed them with the cutting remark that "we may discount them as centres of research."

One of the huge evening schools of technology—in plain English, handicraft schools—will furnish our example of the effects of nibbling at the lower end of the scale. The following passage is taken from an account of the Liverpool Technical School published a few months ago:—

So far as mere numbers go, the Liverpool Technical School appears to be flourishing, but the real test is how far it carries its students. This test is not so satisfactory. In the science classes only 982 out of 2315 presented themselves for pass examinations, and little more than a third of them (361) passed first class. The second-class passes were 424 and the failures 197. In the technology, or handicraft division, 511 out of 1605 presented themselves, and the number of passes was



153 and 158. Only a fifth of the number on the register obtained at the end of the session certificates of moderately efficient work. A more discouraging fact was that nearly 1100 out of the whole 1605 did not even try to pass. On the science side the number who shirked the examinations was 1333 out of 2315. The Committee of Management have, therefore, good ground for their anxiety "to raise the standard of work," and apparently the Board of Education have been stirring them up in the same direction.

While standardising must necessarily be a mere formality in our primary schools, where there are six and a half millions of children to deal with, it is quite practicable in secondary and university education, where there are no unmanageable numbers to handle. Not only is it practicable, but it is absolutely indispensable as proof of efficient work. All public schools and universities profess to hall-mark their output, but each does it in its own way, and for lack of a common standard the results are simply bewildering. Professor Sylvanus Thompson, in a letter to 'The Times' of the 5th August 1907, declared this to be "The Next Most Pressing Educational Reform." In describing the need for it, he said—

In the organisation of secondary education—by far the most pressing of real educational questions—there is nothing more sorely needed than a unification, upon a broad national plan, of the various matriculation and school-leaving examinations, now conducted in the most illogical way by the various universities and by various professional bodies.

Recalling Matthew Arnold's advice of forty years ago — "Organise your secondary education" — Professor Sylvanus Thompson admits that it has been organised to some extent, but "it lacks definite focus." Meantime, he adds, "the universities are in their muddled way trying to make good the defect; and in so far as they are succeeding, it is by going out of their legitimate sphere and doing that which ought to be done once for all nationally as the inherent corollary of secondary education."

These examples of unrest and self-reproach among our educationists might be continued *ad infinitum*. Whatever branch of education we turn to the effect is always the same — disappointment with actual results, and a strong desire for something more rational. The politician engrossed in his electioneering squabbles may be unconscious of this deeper current of discontent, but in due time it will make itself felt. Only the inborn apathy of the middle classes prevents parents and ratepayers rising *en masse* against a system which promises so much and performs so little, which costs so much and yields such miserable fruit.

If further proof were needed that we have hitherto been working on wrong lines and in the wrong direction, it is to be seen in the fact that educational discussion becomes more and more polemical, more and more technical, more and more professional. The clamorous crowd of

“authorities,” lay and ecclesiastical, has pushed aside the ordinary parent and the ordinary ratepayer. Amid the din of codes, conferences, and conscience clauses these unimportant persons are seldom able to get even a five minutes’ hearing. To be perfectly fair, it is not often that they try for it, or even show any desire that way. The average English parent hands over his children to the educational “authorities” as if they were so much raw material to be put through a machine and turned out scholars of a particular brand—classical scholars for the Church and the Bar, scientific scholars for the technical professions, commercial scholars for commerce and finance.

Not once in a hundred times is the proper article actually produced. Judged by results, every school, from the ancient universities down to the newest form of kindergarten, is open to suspicion. The educational “authorities” themselves lead the grumbling, and the average parent and the average ratepayer join in it most heartily without waiting to form any definite ideas of their own as to the real occasion for it. The educationists overflow with theories and arguments to explain away their failure, but the average parent and the average ratepayer never read these learned apologies. The nearest they come to them is an occasional glance over the educational news in the morning papers.

Readers of ‘The Times’ have a daily supply

of "Letters to the Editor" on educational subjects. Perhaps these exercise more influence on middle-class opinion than any other form of educational literature. A close observer may see in them a very correct reflex of the public mood of the moment. And it is certainly significant, not to say ominous, that three-fourths of these letters to 'The Times' are censorious. In a single issue may be seen letters finding fault with nearly every branch of our educational system, from the highest to the lowest. Picking up one at random, it proves to be that of the 2nd August 1907. Its chief contents are the proceedings of the British Association at Leicester, among which we find the following statement by Sir Philip Magnus in his presidential address to the Education Section:—

There could be no doubt that, as regards our elementary education, there was very general dissatisfaction with its results since it was first nationalised thirty-seven years ago. Our merchants and manufacturers and employers of labour, our teachers in secondary and technical schools, all joined in the chorus of complaint. If we looked back upon the history of elementary education in this country since 1870, we could not fail to realise how much its progress had been retarded by errors of administration due very largely to the want of scientific method in its direction.

It may be very easy for Sir Philip Magnus, himself one of the experts, to lay all the blame on want of scientific method; but the average parent and the average ratepayer, for whom I

presume to speak, are beginning to have their doubts about that hackneyed explanation. When business men look into the question with their own eyes, they find other things wanting which may be quite as important as scientific method. They figure up that this educational experiment, the results of which are so universally disappointing, has cost in rates and taxes well over five hundred millions sterling. It is being carried on at an annual public expense of nearly thirty millions sterling; and the question of what we are getting for all that money is quite as urgent as the question of what we are getting for the similar sum spent annually on the British army.

Our universities came in for equally drastic criticism by Sir Philip Magnus. It seems that "university education in this country, and indeed in other countries, had also suffered much at the hands of the unscientific reformer." So unsatisfactory is the present position in France in that respect that a return is being made to the university ideal of seven centuries ago. Academic idealists must be very much at sea if they cannot make up their minds whether they would like to live in the thirteenth century or the twentieth.

Picking up at random another issue of 'The Times'—that of July 25, 1907,—we find the Bishop of Birmingham asking for a Royal Commission to inquire into "the endowment,

government, administration, and teaching of the Universities of Oxford and Cambridge, and their constituent colleges, in order to secure the best use of their resources for the benefit of all classes of the community." In making out a case for inquiry the bishop shocked his brother peers, nine-tenths of them university men, by declaring that "there could be no reasonable doubt that at present our ancient universities had been allowed to become, to an extent altogether beyond what ought to be tolerated, playgrounds for the sons of the wealthier classes."

Certainly both Oxford and Cambridge could make much better use of their immense resources. They could give their undergraduates a much better return for the extravagant cost of a three years' collegiate life. They might also make it plainer to the ordinary man what sort of education they really give, and how much of it the average student takes away with him. These at present are academic mysteries which laymen are expected to allude to only with bated breath. But even the Eleusinia had to move with the times, and why should not University Dons?

No more interesting or instructive inquiry could be undertaken at the present day than to select, say, fifty representative public schools and trace the careers of the boys passing through them in a given period. Its results might give a series of unexpected shocks to our self-complacent educationists. In the first place, it might be

found that a much smaller percentage of them than is generally supposed proceed to the university at all. Secondly, a surprisingly small number of them take university honours. Thirdly, a still smaller number achieve distinction in after life.

A similar winnowing of the wheat from the chaff among undergraduates might have a salutary effect on academic pride. Not at Oxford and Cambridge alone, but at all our universities, new as well as old, the quantity of ripe fruit produced is a mere trifle compared with what is turned out half ripe or positively raw. At Oxford, seven-eighths of the undergraduates have to be content with a bare pass, and many of them deny themselves even that modest distinction.

Of the thousands who enter the academic race, how very few have either ability or staying power to see it out. The new universities and technical colleges are not much better off in this respect. All of them are handicapped by three difficulties—first, that of attracting students with an adequate general education; second, of keeping them to their work for the necessary three or four years; third, of working them up to a decent graduation level. The number who fall by the way and become wasters or misfits is out of all proportion to the number who scrape through.

In our secondary education, our technical education, and our university education, a dismal amount of half-finished work is being turned out.

And apparently the teachers cannot help themselves. Whether the teaching provided is above the heads of the students, or they have no taste for it, or their power of application is on the decline, this much is obvious, that in most cases the educating process goes a very short way towards its nominal goal. A mere percentage of the climbers get even half-way up the ladder of learning. That makes no difference, however, in the expense to which they put their families and the State. It is a question if the failures of our Public School and University curricula do not cost more than the successes.

THE END.



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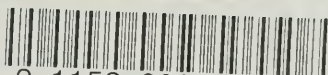
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